

Aviation News

McGraw-Hill Publishing Company, Inc.

DECEMBER 4, 1944



Thunderbolt Amphibian Unveiled: Formidable contender among family type personal aircraft for post-war use is new Thunderbolt amphibian built by Republic Aviation Corp., Farmingdale, L. I. Plane is all-metal construction, seats four and is expected to sell for less than \$4,000.

CAA Port Plan Lets Congress Solve Landing Problem

National program provides for 3,050 new airports and improvement of 1,625 at cost of \$1,021,567,945.....Page 9

Provisional Body Prepared As World Air Talks Close

Some major differences between U. S., Britain and Canada on multilateral civil air transport agreement still unsolved.....Page 7

Echols Urges Constant Research on Aircraft Design

Woodrum Post-war Military Policy Committee told that equipment now in use will be obsolete two or three years after war.....Page 11

Next 6 Months May Clarify West Coast Industry Aims

"Confidential" customer previews of mockups of post-war planes is gradually giving form to general picture.....Page 16

Boeing Converts Seattle Plant from B-17's to B-29's

Project, already past half-way mark and expected to be completed early next year, will bring total of units to five.....Page 35

House Group Hits CAB Stand Against Ship Firms

Bill recommended authorizes Commission to make "final and conclusive" findings as to right of steamship operators to use aircraft.....Page 42

Heavier "fire power" licks this enemy, too



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THE AVIATION NEWS

Washington Observer

CAA TRAINING PROGRAM—Indications are that the CAA has acted fast on its proposed civil air training program. Informed persons expect a report from CAA soon, recommending to Congress an extension of Civil Pilot Training, under which federal money would be matched with that of school-sponsors and of students, for training courses. Primary aim is to generate a large flying population which will support a big aircraft manufacturing industry; and secondly, to create a military backlog of aviation skills. CAA intends to go below physical standards of the Army and Navy to cover a large student group. Of course, all acceptable students would be available for whatever practice military training may be established. Some opposition to CAA's plan is expected, on the ground that it will lead to federalize aviation to the detriment of local government and private initiative and enterprise.

PEC REORGANIZATION—A full-dress reorganization of the Production Executive Committee is in the making for the purpose of making it a full-time operating unit. Formerly, PEC meetings were held once a week, but with the PEC functions split among four newly-created divisions, the unit will be in a position to study and properly consider the mass requirements and schedules which should be examined before cutbacks are ordered. All cutbacks of any size clear through this group, which coordinates the procurement and manufacturing positions. It is important and should be watched.

CONGRESSIONAL OUTLOOK—Chances of obtaining revisions of the surplus property law necessary to make it workable are now very poor for the reason that Congress, rather than being receptive to the views of the new SFR, is questioning two of the three appointments. Senator Gillette, scheduled to be the third member, is a lame duck and will be confirmed.

AVIATION DIVISION—Happily, this phase of surplus handling is in strong position, with policies firmly outlined and activities already under way. However, it should not be overlooked that a new SFR could move in and radically revise the entire setup. This would be extremely serious, since the policies now in effect have been drawn from the experience and knowledge of both independent and aviation groups and, as it stands now, there is good chance that aviation surpluses will be disposed of without wrecking much of the industry. Any rocking of the boat could be disastrous.

V-E DAY CUTBACKS—The Army is now said to believe that the 50 per cent cutback of munitions previously estimated for V-E Day is too high and is looking to slash that figure sharply. In production scheduling discussions with WPB Chairman Krag new is reported to feel that the 40 per cent figure is a trifle high and believes that it will be somewhat less than that, although it does not drop as low in his estimate as the Army's figure. Krag's current thinking is said to be that the overall cutback will be about 25 per cent. Although the five per cent drop seems slight, actually it will amount to nearly \$200,000,000 a month in dollar volume. At any rate, the uncertainty over the extent of the cutback once V-E Day, is one of the factors holding up the highly-published Priorities Regulation No. 28. This regulation spells out Krag's V-E Day plan. He had intended to release it long ago, according to Washington insiders, but has acceded to Army demands to withhold it until immediately before V-E Day.

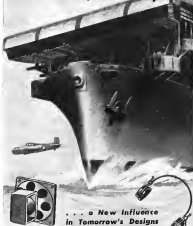
SURPLUS PROPERTY BOARD—The high hopes held for a top-notch Surplus Property Board went glimmering with the new appointments. Many were puzzled by the switch-over from various committees to those finally named. A strong board might have handled a poorly-written law and obtained quick and necessary legislative revisions.

LEND-LEASE—Reports emanating from the Chicago conference that Lend-Lease will be used to equip the commercial airlines of some of our Allies, even before the war has ended, have been denied by officials of the FEA.

SHARP INCREASE IN DEMANDS—While admitting a sharp increase in requests for transport planes under Lend-Lease, FEA officials say that each such request must be justified solely in the light of its military urgency. The program for providing Lend-Lease to Britain during Phase Two (after Germany falls) does not call for any substantial increase in transportation equipment, according to best sources in the Capital.

KRUG TO WEST COAST—Plans for WPB Chairman Krag's sloopbase trip to the West Coast to expedite production in war plants there have changed almost daily since he first announced his intention of making the trip. Now tentatively scheduled for this week, it may be changed again. One hint came when Krag

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Information please...

at the NATA Convention...

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VOLUME 2 • NUMBER 10

Aviation News
McGraw-Hill Publishing Co., Inc.

December 4, 1944

Provisional Organization Prepared As World Air Talks Draw to Close

Delegates to Chicago conference pack for home after month of deliberations, with some of major differences between U. S., Britain and Canada on plans for multilateral civil air transport agreement still unresolved.

By MERLIN MICKEL

Worried delegates to the International Civil Aviation Conference packed to go home last weekend after more than a month of deliberation, leaving unresolved some of the major differences between American, British and Canadian plans for multilateral air transport agreements.

So strong was support for the latest U. S. proposal, however, which would give signatory states virtually unrestricted freedom of the air, that it appeared a likely basis for interim operation until a permanent convention could be effected.

Provisional Organization Planned—Special trains were ordered to take the delegates away from Chicago Sunday, but before they left they were to set up a provisional organization, with committees on air transport, air navigation, and a multilateral convention, to function until a treaty can be agreed to or another conference is held.

As the conference entered its fifth week, even the most stubborn optimism waned in the face of a situation that found the United Kingdom, despite some compromise, insisting on a strong international body with powers beyond those the U. S. was willing to accept; a world air organization, while Canada continued its attempts to provide a universally satisfactory plan as meeting ground for the divergent views.

Five Air Freedoms—Most of the discussions hinged on the fifth of the five freedoms of the air proposed by the United States, under which each member state would give international air services by other signatory privileges (1) to fly across its territory without landing; (2) to land for non-passenger, mail and freight loads on

its purpose; (3) to put down passengers, mail and freight loads on the territory of the state whose nationality the aircraft possesses; (4) to take on passengers, mail and freight destined for the territory of the state whose nationality the aircraft possesses; and (5) to take on passengers, mail and freight destined for the territory of any other member state and put down passengers, mail and freight coming from such territory.

The tip-off-way between the Americans and British involved largely questions whether intermediate pickup traffic under this fifth freedom might be used, as the U. S. had advanced, in determination of capacity and increases in that capacity under proposed "sectorial" clauses. The British re-

Hughes Plane Burns

Army scrutiny of the high-speed, single-passenger airplane developed by Howard Hughes, and due to be in production next year, was disrupted last week when the plane was inspected at Hughes' Culver City, Calif., plant by Col. John Housh, head of the photographic unit of Eighth Bomber Command.

At the same time it was learned that Hughes' colorful, twin-boom D-3 experimental plane, which patterned the photographic explosion, was destroyed Nov. 11 when Hughes' highway bomber at a Mojave Desert dry lake burned.

While Hughes periodically was reported to have established new speed records with the D-3 during a year of test flying, no announcement of results have ever been issued by the designer.

joined the idea, but the Americans insisted it must apply if long routes were to run at a profit, without subsidy.

Impasse—The impasse brought about by this divergence resulted in submission by the U. S. of a



Top Men at Air Conference: Three of the key figures at the international air conference in Chicago are shown here. Left to right they are Lord Bessborough, chairman of the United Kingdom delegation, Adolf A. Berle, Jr., chairman of the U. S. delegation and president of the conference, and C. D. Howe, chairman of the Canadian delegation.

sampler proposal, without many of the complexities of the earlier U. S. proposal. Drafting provisions on traffic quotas and allocation, this retained the five freedoms, specifying with respect to the last three that each member state undertake to permit through services only on a route containing a reasonably direct line, and from and back to the homeland in deference to certain countries, it also provides that a place making a non-traffic stop may be required to offer commercial service. Changes would be restricted to annual. Each member state would designate the international routes to be followed within its borders. It also contained the usual requirements for non-commercial flights, provision for technical services and the filing of reports by international airlines.

One provision in favor among the conferees was that countries not joining in the proposed convention be left to make their own arrangements bilaterally. Presumably the latter would include Great Britain. Most of the small countries at the conference sided with the American view for the directed development of international air traffic. France gave the only unqualified acceptance of the British proposal.

Under the American plan, significant first step in contract in support of the fifth freedom, involving intermediate traffic, as they see fit. Any member state objecting to an article by another could not examination by a representative of the whole, of consultation with other member states failed to resolve the difficulty, or the offending state failed to act remedially, could recommend suspension, effective at one-third vote of signatory states.

► Drafting Proposal—The Canadian plan, which also provided that a member state could join in or not on fifth freedom traffic, provided for restrictions for examination on the basis of such traffic. These restrictions the U. S. did not want.

The British, in a revised draft of their own position, adopted a great part of the Canadian proposal, with the change, however, that on second and subsequent divisions of a through route, the council of the world organization shall, in consultation with airlines concerned, determine and recommend the capacity a state might operate on entering the division. The British delegation suggested that the question of opening fifth freedom

traffic in Canada be submitted to the judgment of the international organization, thus maintaining the position they have held all along for a strong international body. Indications were that the U. S. delegation view had the support of the majority of the conference. The Latin American group appeared to unanimously, and a spokesman predicted that the 35 votes from those delegations would be matched by a like number from other nations in the event of a full conference vote.

Branch Confirmed

The Senate Commerce Committee last week confirmed President Roosevelt's nomination of Harille Brainerd to succeed himself as a member of the Civil Aeronautics Board for a term of six years beginning Jan. 1.

Brazil to Make AT-6's

North American Aviation has granted Brazil license to manufacture the AT-6 Texans advanced trainer, the same aircraft class is produced under license in the Keesleys plant in Canada and the Commonwealth Aircraft Corp. plant in Australia.

In addition to complete design of the plane's construction, North American is providing Brazil's Ministry of Aeronautics with enough sets of Texan component assemblies to build a number of airplanes, some of which is assembled.

► Training for Workers—Building of the planes from major assemblies and then from detailed parts will enable the new Brazilian aircraft workers to gain sufficient experience to build the plane from parts made in their own plant.

Breakdown by States on National Airport Plan

A table showing existing airports, projected improvements and projected new airports, by states, under the new CAA national airport plan submitted to Congress last week, follows:

State	Existing airports	Cost, \$ mil.	New airports	Cost, \$ mil.	Total airports	Cost, \$ mil.	At completion
Alabama	27	1,046,000	1	1,000,000	28	2,046,000	29
Alaska	1	1,000,000	1	1,000,000	2	2,000,000	2
Arizona	1	1,000,000	1	1,000,000	2	2,000,000	2
Arkansas	1	1,000,000	1	1,000,000	2	2,000,000	2
California	1	1,000,000	1	1,000,000	2	2,000,000	2
Colorado	1	1,000,000	1	1,000,000	2	2,000,000	2
Connecticut	1	1,000,000	1	1,000,000	2	2,000,000	2
Delaware	1	1,000,000	1	1,000,000	2	2,000,000	2
D.C.	1	1,000,000	1	1,000,000	2	2,000,000	2
Florida	1	1,000,000	1	1,000,000	2	2,000,000	2
Georgia	1	1,000,000	1	1,000,000	2	2,000,000	2
Hawaii	1	1,000,000	1	1,000,000	2	2,000,000	2
Idaho	1	1,000,000	1	1,000,000	2	2,000,000	2
Illinois	1	1,000,000	1	1,000,000	2	2,000,000	2
Indiana	1	1,000,000	1	1,000,000	2	2,000,000	2
Iowa	1	1,000,000	1	1,000,000	2	2,000,000	2
Kansas	1	1,000,000	1	1,000,000	2	2,000,000	2
Kentucky	1	1,000,000	1	1,000,000	2	2,000,000	2
Louisiana	1	1,000,000	1	1,000,000	2	2,000,000	2
Maine	1	1,000,000	1	1,000,000	2	2,000,000	2
Maryland	1	1,000,000	1	1,000,000	2	2,000,000	2
Massachusetts	1	1,000,000	1	1,000,000	2	2,000,000	2
Michigan	1	1,000,000	1	1,000,000	2	2,000,000	2
Minnesota	1	1,000,000	1	1,000,000	2	2,000,000	2
Mississippi	1	1,000,000	1	1,000,000	2	2,000,000	2
Missouri	1	1,000,000	1	1,000,000	2	2,000,000	2
Montana	1	1,000,000	1	1,000,000	2	2,000,000	2
Nebraska	1	1,000,000	1	1,000,000	2	2,000,000	2
Nevada	1	1,000,000	1	1,000,000	2	2,000,000	2
New Hampshire	1	1,000,000	1	1,000,000	2	2,000,000	2
New Jersey	1	1,000,000	1	1,000,000	2	2,000,000	2
New Mexico	1	1,000,000	1	1,000,000	2	2,000,000	2
New York	1	1,000,000	1	1,000,000	2	2,000,000	2
North Carolina	1	1,000,000	1	1,000,000	2	2,000,000	2
North Dakota	1	1,000,000	1	1,000,000	2	2,000,000	2
Ohio	1	1,000,000	1	1,000,000	2	2,000,000	2
Oklahoma	1	1,000,000	1	1,000,000	2	2,000,000	2
Oregon	1	1,000,000	1	1,000,000	2	2,000,000	2
Pennsylvania	1	1,000,000	1	1,000,000	2	2,000,000	2
Rhode Island	1	1,000,000	1	1,000,000	2	2,000,000	2
South Carolina	1	1,000,000	1	1,000,000	2	2,000,000	2
South Dakota	1	1,000,000	1	1,000,000	2	2,000,000	2
Tennessee	1	1,000,000	1	1,000,000	2	2,000,000	2
Texas	1	1,000,000	1	1,000,000	2	2,000,000	2
Utah	1	1,000,000	1	1,000,000	2	2,000,000	2
Vermont	1	1,000,000	1	1,000,000	2	2,000,000	2
Virginia	1	1,000,000	1	1,000,000	2	2,000,000	2
Washington	1	1,000,000	1	1,000,000	2	2,000,000	2
West Virginia	1	1,000,000	1	1,000,000	2	2,000,000	2
Wisconsin	1	1,000,000	1	1,000,000	2	2,000,000	2
Wyoming	1	1,000,000	1	1,000,000	2	2,000,000	2
Total	310	14,000,000	310	14,000,000	620	28,000,000	620

CAA Port Plan Gives Congress Job of Solving Landing Problem

National program provides for 3,950 new airports and improvement of 1,625 at cost of \$1,021,567,945, to be shared by federal and local governments.

Announcement of CAA's national airport plan provides 3,950 new airports and improve 1,625 existing fields at a cost of \$1,021,567,945 with federal and local government shares of \$538,884,000 and \$482,683,945, respectively. The program was presented at the airport problem of increased landing facilities for the nation to Congress for action.

Prepared in answer to a request from the House of Representatives for the program, the plan calls for appropriations not to exceed \$100,000,000 annually over a period of years, to be used as federal aid to local governments in "developing an adequate system of airports for present and projected future needs of civil aviation." As precedent for the airport plan, the public roads program in which federal and local governments have been sharing costs on an equal basis over a period of years is cited.

► 3,268 Communities Affected—The plan provides for locating one or more airports at 3,268 cities, towns or communities, which would plan at least one airport in 66 per cent of the counties of the United States, while currently only 33 per cent of the counties have airports. A listing of the airports by community size accompanies the report. Officials of any locality desiring specific information on airport facilities proposed for their area should contact their CAA regional office for particulars. However, it is assumed that many local officials already are familiar with the improvements proposed for their areas, since the plan was prepared by CAA representatives in cooperation with officials of the various localities which would be served.

Proposals in the plan would increase the number of Class 1 airports, (designed primarily for private flight) from 981 to 3,387, Class 2 airports, (for private flight and feeder airlines) from 819 to 3,195, Class 3 airports, (inconformable present facilities of existing civil airports by Army and Navy port plans) from 443 to 454, Class 4 airports (for larger four-engine equipment) from 400 to 520, and Class 5, (for long-range domestic or foreign) from 305 to 326.

► Cost Distribution—Costs of construction, not including land or buildings, would be distributed as follows: Airport site preparation (grading, drainage, excavating, etc.) \$338,884,000 or 33.1 percent; lighting, \$305,385,000 or 30.7 percent; lighting, \$305,385,000 or 30.7 percent; radio, \$10,883,800 or 1.1 percent; miscellaneous, (approach clearing, access roads, marking and landscaping) \$58,488,145 or 5.8 percent.

Airports intended for private flying only would get 39 percent of proposed expenditures, improvement of presently designated airports for general aviation would amount to 10.2 percent, and improvement or construction making possible extension of airline service, and in most cases also improving personal flying facilities, would account for 50.1 percent.

Of money to be expended, communities of less than 50,000 would get 83 percent and communities over that size 17 percent, although the latter are tentative and subject to alteration.

► Zoning Provisions—CAA proposes that out of approach clearing and protection be included in federal aid program, and recommends that adequate zoning laws protecting airports, be required of political subdivisions as a condition of receiving federal aid.

The plan is described as meeting all requirements for a useful public works program. Actual construction including labor on required buildings and other facilities by CAA would provide additional income for the community.

After the airports were constructed, it has been estimated that continuous employment would be provided 60,000 persons, at an average of 18 per airport, not counting additional employment provided by allied aviation interests and increased community benefits resulting from the airport.

► Military Use—The plan of existing civil airports by Army and Navy port plans) from 443 to 454, Class 4 airports (for larger four-engine equipment) from 400 to 520, and Class 5, (for long-range domestic or foreign) from 305 to 326.

Suggested Requirements

CAA recommendations in developing the national airport plan submitted to Congress suggest that the following requirements be made for state and local governments participating in the federal aid program.

- Any federal aid airport project must meet CAA approval as to development, cost, location, layout, grading, drainage, etc., and lighting.
- States participating shall establish and empower an official as officially responsible for the share of the program, have on call legislation protecting airport approaches and enabling local industries to participate as sponsors of airport projects.
- Have no special laws on aviation (liability, fuel, operations or insurance) that the proceeds of which are not used entirely for aviation purposes, ensure operation of all public airports within the state, and have no devaluation or unreasonable charges, make airports which receive federal aid funds available for use by the U. S. government aircraft without charge except to cover damage done by such planes; require a standard accounting and fiscal reporting system at each federal aid airport, attached to CAA.
- Specimens of projects shall contract with CAA to insure proper maintenance and protection of federal aid airports and their service in the public interest.

Community benefits from speedy air transportation, future increasing value of the airport to the community, protection of public health and safety, by increasing safety of flying, and by providing emergency transportation facilities, would provide additional investments by private interests, and ultimate savings in transportation cost to the public, all are cited as benefits which would accrue.

► \$490,000,000—Fiscal Program—The report estimates a total pool of \$205,000,000 prospective funds will be available after the war, from military aviation, aviation facilities and high school aviation courses. It only calls for \$490,000,000 to bring this would mean 2,500,000 flying, plus millions of potential airline riders. It estimates that there will be 400,000 civil airplanes in this country ten years after the war.

AVIATION CALENDAR

Jan. 24-47 Annual Air Force Day, Washington, D.C.
Jan. 25-47 Annual Air Force Day, Washington, D.C.
Jan. 26-47 Annual Air Force Day, Washington, D.C.
Jan. 27-47 Annual Air Force Day, Washington, D.C.
Jan. 28-47 Annual Air Force Day, Washington, D.C.
Jan. 29-47 Annual Air Force Day, Washington, D.C.
Jan. 30-47 Annual Air Force Day, Washington, D.C.
Jan. 31-47 Annual Air Force Day, Washington, D.C.
Feb. 1-47 Annual Air Force Day, Washington, D.C.
Feb. 2-47 Annual Air Force Day, Washington, D.C.
Feb. 3-47 Annual Air Force Day, Washington, D.C.
Feb. 4-47 Annual Air Force Day, Washington, D.C.
Feb. 5-47 Annual Air Force Day, Washington, D.C.
Feb. 6-47 Annual Air Force Day, Washington, D.C.
Feb. 7-47 Annual Air Force Day, Washington, D.C.
Feb. 8-47 Annual Air Force Day, Washington, D.C.
Feb. 9-47 Annual Air Force Day, Washington, D.C.
Feb. 10-47 Annual Air Force Day, Washington, D.C.
Feb. 11-47 Annual Air Force Day, Washington, D.C.
Feb. 12-47 Annual Air Force Day, Washington, D.C.
Feb. 13-47 Annual Air Force Day, Washington, D.C.
Feb. 14-47 Annual Air Force Day, Washington, D.C.
Feb. 15-47 Annual Air Force Day, Washington, D.C.
Feb. 16-47 Annual Air Force Day, Washington, D.C.
Feb. 17-47 Annual Air Force Day, Washington, D.C.
Feb. 18-47 Annual Air Force Day, Washington, D.C.
Feb. 19-47 Annual Air Force Day, Washington, D.C.
Feb. 20-47 Annual Air Force Day, Washington, D.C.
Feb. 21-47 Annual Air Force Day, Washington, D.C.
Feb. 22-47 Annual Air Force Day, Washington, D.C.
Feb. 23-47 Annual Air Force Day, Washington, D.C.
Feb. 24-47 Annual Air Force Day, Washington, D.C.
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Feb. 27-47 Annual Air Force Day, Washington, D.C.
Feb. 28-47 Annual Air Force Day, Washington, D.C.
Feb. 29-47 Annual Air Force Day, Washington, D.C.
Feb. 30-47 Annual Air Force Day, Washington, D.C.

ends, compared with approximately 15,000 civil planes today, and expects the number of military aircraft to increase beyond the 400,000 mark.

It is pointed out that towns of less than 25,000 show the greatest deficiency in airports. Only 2,340 of the 6,275 towns with populations of 1,000 to 25,000 have airports, while the 413 cities with populations above 25,000 have 681 airports. And it is emphasized that every airport provided for the smaller communities will increase the utility of the existing airports, and will provide additional landing places for flyers residing in the metropolitan districts.

New Hilltopper

Under the wing of Henry Kaiser, young Stanley Hiller, Jr., is in full experimental development of new designs for the "Hilltopper" aircraft. The new version may be expected early next year.

References are made to the design that may be a post-war commercial model, which he expects to sell at prices competitive with production airplanes of conventional design.

Hiller currently is developing all-metal rear blades which will be tested on his single-seat prototype model. As head of the "Hilltopper" division of Kaiser Corp., Hiller has headquarters at 1820 Adams St., Berkeley, Calif., a block from the city's business center.

4795 Ports Planned For Private Flyers

Tons of Class I and II fields is provided under CAA national airport program.

A total of 4795 Class I and II airports suitable for private flyers would be made available in fulfillment of the proposed CAA national airport plan, recommended to Congress last week in a report filed at request of the House of Representatives. Currently, there are 2917 airports in this class. The program calls for improvement of 1000 of the existing fields, and for construction of 3807 additional new fields, in Classes I and II.

The program, as summarized, places special emphasis on the possibilities of personal flying, pointing out the urgency for increasing the utility of the personal plane by additional landing facilities.

House Majority Whip—Bill of personal aircraft "affords the brightest hope for a mass market to maintain a reasonable fraction of our present 40-billion dollar-a-year aircraft industry," the report declares. "It points out the necessity of preserving a sound nucleus as a source of employment in peace and as a source of weapons of war."

"We need for airports, near the potential flyer's home, or place of business, and near recreational areas, national parks and other places to which they might want to go, as well as airports in areas in which the majority of today's small airports were located with low development cost as the primary motivating factor, rather than convenience to residents of the community served."

●Civil Pilot Training—Emphasis is placed on the training of civilian pilots as a reserve of manpower in national emergencies. The development of private flying airports is pointed out that in many of the smaller towns there are no fields at all either private flying or transport service, while in metropolitan areas there is additional need for new small air fields to separate private flying from the growing air transport traffic.

A study, showing distribution of Class I and II airports by population groups, reveals that 24 areas with over 500,000 population each have 38 airports while the 14,710 communities with under 5,000 population, have 1,141 airports, a ratio of 61 airport per

community, as against 2.35 airports per metropolitan area. Proposed airports under the new program would bring the figure up to 3.1 for the large cities, and to .33 for communities under 5,000.

Another study also averages estimated cost for improving or developing one of the 2,847 Class I fields at \$73,770, and the cost for improving or developing one of the 2,198 Class II fields at \$357,468.

Forrester Urges Air Policy Group

Secretary of the Navy James V. Forrestal asked Congress last week to enact legislation setting up a commission—comparable to the widely known Morrow Board—to formulate post-war military and civilian air policies.

Forrester's recommendation was contained in a report submitted to the Senate by Joseph R. East, Jr., of the Senate Commerce Committee, on legislation creating such a commission, introduced by Sen. James Murray (D., Mass.) in August.

●Opposed By Berle—Assistant Secretary of State, Adolf A. Berle, however, raised objection, although he did not entirely place the State Department on record as opposed to passage of the legislation. Berle said the proposed Air Policy Commission, making all recommendations on military and civilian aviation policy to Congress six months after its creation, would be sure to get into the process of establishing foreign air routes.

The commission would be composed of two members of the Senate, two members of the House, four members of the Executive Branch of the Government, and six public members, including industry and labor representatives, and a chairman.

●Wants Coast Guard Represented—The Navy Department would favor a new commission of the relationship of the service and industry by a new "Morrow Board." Forrestal declined and suggested that the commission be enlarged to include representation from the Coast Guard.

"It is likewise desirable to point out the interest of the Coast Guard as the principal agency of the Federal Government charged with carrying out the program of safety in the establishment of national policy governing maritime safety required in connection with transoceanic air navigation," he said.

Echols Urges Constant Research On Aircraft Design, Accessories

Assistant chief of air staff, material and services, tells Woodrum Post-war Military Policy Committee that equipment now in use will be obsolete over three years after war.

By WILLIAM G. KEY

It is of the utmost importance that the aircraft manufacturers maintain relatively large, constant engineering staffs, and these engineers should be kept constantly at work on the development of new designs of aircraft and accessories, Maj. Gen. Oliver P. Echols, assistant chief of air staff, material and services, has told the Woodrum Post-war Military Policy Committee.

General Echols advocated replacement of one-fourth of AAF equipment each year, a period of five years after the war, pointing out that every piece of equipment now operated will be obsolete within two or three years after the war, adding that there is every reason to believe that equipment in the next ten years will be much greater than the changes in the last ten years.

●Favors Research Board—The AAF officer did not elaborate on plans for maintaining engineering staffs of the aircraft industry, which was hampered in pre-war years because it was not permitted to spend engineering costs to service airplanes, other than to say that research and development did not depend so much on facilities as it did on the money made available to refine these facilities.

General Echols supported the proposal of Undersecretary of War Patterson for a Research Board for National Security. In order to be acceptable from the AAF viewpoint, it must have AAF representation on the Board, he said, and on all subcommittees concerned with research projects of interest to the AAF.

The Committee on Post-war Research set up by the Secretary of War and the Secretary of the Navy and headed by Charles E. Wilson, recommended that the Board be composed of 20 civilians and 10 officers each from the Army and the Navy, with seven members of three civilians and one officer from the Army and one from the Navy.

●Organization—The chief question of the Board's establishment lies in its organization, whether under

the charter of the National Academy of Sciences or as an independent agency. It is set up under the charter of the Academy, funds would be provided through earmarking of items in Army and Navy appropriations bills, with whatever other money may be available from other sources. As an independent agency, the Board could go directly to Congress for its funds, a feature that the majority of the committee felt desirable but one that the War Department is opposing.

Echols echoed this War Department view in his testimony.

Army Ground Forces, on the other hand, expressed approval of the independent agency plan as a recommendation supported by Brig. Gen. B. W. Cribbs for Maj. Gen. A. W. Waldron. The committee pointed out that research "insurance" had been an obstacle of complete freedom and that independent agency plan would permit parallel approach to problems which might not be possible where the funds for research are obtained by means of earmarking items in Army and Navy appropriations bills. The AGF testimony noted the advantages of independent research in developments of this war.

Expect Woodrum Report on Research

Committee, recommended by new Congress in January, is likely to submit results of studies on important development phase.

The question of post-war consultation set up by the Secretary of War and the Secretary of the Navy and headed by Charles E. Wilson, recommended that the Board be composed of 20 civilians and 10 officers each from the Army and the Navy, with seven members of three civilians and one officer from the Army and one from the Navy.

Capitol observers said they felt positive that the Waldron Select Committee on Post-war Military Policy would be reconstituted in the new Congress as it has requested in its last interim report of this session.

in its last interim report of this session.

The committee has no legislative power, simply recommending to the House its conclusions drawn from a series of hearings and investigations. As such, it will supply the sounding board for proponents and foes of universal military service and compulsory training before arriving at its own conclusions.

●Two Breakers Defeated—Two of the most active members of the committee were defeated in the last elections, Rep. Mass. (R., Minn.) and Rep. Miller (R., Conn.). In all, four members of the committee, at least, will have to be replaced. Rep. Costello (D., Cal.) was defeated in the primaries and Rep. Merritt (D., N. Y.) in the election.

The committee was not able to complete its current studies—on research and development—during the current session because of the absence from Washington of Dr. George W. Lewis, director of national research, and of the National Advisory Committee for Aeronautics, and Dr. Vannevar Bush, of the Office of Scientific Research and Development.

As soon as these experts can testify before the committee, it is expected to submit a report on the research and development phase,



NORDEN BOMBIGHT

One of the first photos of the famous and long-overlooked Norden bombight is shown above. The lower half usually is permanently installed in the plane, and in the stub, containing horizontal gyroscope mechanism, maintains aircraft control. The vertical gyroscope, which stabilizes the telescope, is in the upper half, as is the most computing apparatus, right.

generally considered in the aircraft industry to be the most important single subject heard by the Woodrum Committee. It will then take up the question of compulsory military service.

■ Favored By War Dept.—The War Department unquestionably will advocate compulsory training for all youths with continued military training over a specified period. The portion of the Navy has not been indicated, although traditionally the Navy favors voluntary service and the Marine Corps is known definitely to favor the re-establishment of the Corps as a voluntary organization as soon as the war is over. The Woodrum Committee hearings are expected to develop these viewpoints for the guidance of Congress.

Following the last war, the War Department sought a great standing army, with little or no reliance on a citizen reserve. This attitude has been changed, and it is now expected that the Navy, working with the War Department, now favoring the citizen-soldier concept of national defense.

■ Pilot Training.—The AAF looks with disfavor on the training of pilots outside the military service period, principally for the reason that the period of compulsory service probably will be one year, insufficient time to complete the extensive training of a reserve pilot. It may be that training will be given the option of AAF training if they volunteer for a longer pe-

riod of service. This would also be the viewpoint of the Naval air arm. The Marine Corps is planning to revert to its former requirement that all aviators serve a period of two years with the ground forces before assignment to the air arm.

Aviation Insurance Coverage Broadened

Accident policies to be available in amounts up to \$200,000, North American Companies reveal.

Broadened coverage of aviation accident insurance handled by the North American Companies, including riders covering passengers, pilots and instructors in other than commercial airplanes, was disclosed last week. Accident insurance will be available in amounts up to \$200,000, the announcement was made.

The revised master policy for aviation accident insurance removes restrictions on travel in the western hemisphere and on travel only on insurance company-approved airlines. It also removes the "three hundred miles over water" restriction, but does not include travel on domestic airlines operating internationally outside of the western hemisphere. Special coverage is retained for travel in this category.

■ Restrictions Removed.—Connecti-

cut General Life Insurance Co., early in November, removed restrictions on air travel, providing coverage on any American airline operating anywhere on the globe.

The riders covering privately or industrially-owned planes, both for pilots and passengers, have been rewritten to make them more clear cut, but the rates remain the same.

Rates are lowered, however, in the charge for weekly indemnity and medical expense applying to passengers in commercial and non-commercial planes.

■ Basic Accident Policy.—The basic accident policy is issued at a rate of \$1.30 per thousand, with the first \$500 blanket medical costing \$2 and each hundred additional \$0.50. The rate for each \$5 of weekly indemnity is quoted at 50 cents.

The rate with rider covering passengers in non-commercial planes is \$3.60 per thousand. First \$500 medical is quoted at \$5, covered with the \$2 rate of the commercial airline travel basic policy, but additional \$100 medical remains at 50 cents. Weekly indemnity is \$0.50.

Additional charges for this rider. The rate with rider for non-commercial pilot is \$5 per thousand, other charges being the same as that for a passenger in non-commercial planes.

For commercial pilots, the rate is \$5 per thousand for the first \$5,000 of principal sum and \$10 per thousand for each \$1,000 over \$5,000. Weekly indemnity again is \$5.00, this time to \$2,500. \$5 of indemnity. The first \$500 medical remains the same as for non-commercial pilots—\$5, but each additional \$100 is quoted at 70 cents instead of 40 cents.

Cover, Stupar Killed

Col. Carl A. Cover, 31, vice-president of Bell Aircraft Corp., and Noel Stupar, 30, Bell industrial planning director, were killed last week in the crash of their two-engine plane as they were approaching Wright Field at Dayton.

Cover, formerly in charge of test flying and development for Douglas Aircraft, had returned to active service with the AAF McEntire Command at Wright Field in charge of redesign work, and left that post to go with Bell, heading the Marietta, Ga., B-29 plant. He was widely known in aviation through his test flying over a long period of years, having piloted the Douglas DC-4 and other

well known planes on their first flights. His work in the B-29 program was commensurate from Gen. H. H. Arnold.

■ Aviation Pioneer.—Stupar, a native of Austria, formerly associated with Curtiss-Wright Corp., pioneered in aviation manufacturing, operating the Stupar Air Works in Chicago, from 1909 to 1912, and later was chief engineer of the Chicago Air Works, and manager of the Standard Airplane factory in New Jersey. He had been with Bell since 1948.

Aircraft Surplus Offered in Canada

Surplus aircraft material, as well as buildings and grounds of the Canadian Pacific Air Lines' aircraft repair plant at New Westminster, B. C., were among the \$1,000,000 worth of surplus supplies recently placed on sale at Vancouver by the Canadian War Assets Corp. All sales were made through established dealers on a "first-come, first-served" basis. Bidding between dealers is the method being used, with top priority going to government departments, the armed services and provincial governments.

Federal Aircraft Corp., government-owned, in conjunction with War Assets Corp., controls the sale of excess aircraft and surplus materials. At Boeing Aircraft Co. of Canada, Vancouver plant, a large amount of miscellaneous materials and supplies not exclusive to the aircraft industry, is being sold as commercial hardware through civilian channels, with other aircraft plants having first call on equipment. Construction of surplus equipment of the government-owned Aero Timber Products Co., also is being placed on sale, with declining needs for airplane supply centered on the Pacific coast.

Life Insurance Order

War Production Board lifted the classification order governing manufacture of aircraft planning fittings, reporting that adequate facilities for manufacture now exist. Reversion permits deviations from standard designs to be made wherever needed without special permission from the War Production Board. The order, suspending unit of WPA's Aircraft Resources Control Office.

However, the Board pointed out that no additional requirements for controlled materials, critical materials or labor are allowed and



"Yankee Doodle Two." This new photo shows the commercial version of the TG-4A glider trainer which was developed by Loether-Kingfisher Aircraft from the single-place airplane, Yankee Doodle which has appeared at Vancouver soaring meets and airshows.

that manufacture remains subject to priorities regulations.

Glider Type Tested

"Radical" new airplane type is Curtiss SC-1.

First public mention of the Curtiss SC-1 Seabawk, described as a radical new Navy seaplane type, is made by Rear Admiral DeWitt Clinton Hamway, chief of the Bureau of Aeronautics, in Army-Navy "C" ceremonies at the Columbus, O., Curtiss-Wright plant.

No details are disclosed by Admiral Hamway, who predicted that the plane would "prove outstanding in the operational field of its operations." **■ Shipboard operation.**—However, the fact that it is announced as a seaplane type would indicate that it is a new plane designed for shipboard operation from battleships and cruisers, supplementing or replacing the Chance-Vought Kingfisher.

The Kingfisher has proved to be one of the war's most valuable planes, despite the fact it is obsolete by present standards. It has notably been used for rescue of downed seamen in Pacific actions and seamen from wrecked or torpedoed vessels.

The company is working on an improved model for post-war production.

Revision of Pre-war Policy Asked

Aircraft industry sources, receiving testimony before the Woodrum Post-war Military Policy Committee on post-war development, expressed the hope that pre-war policy on the development of military planes would be revised to permit manufacture of the engineering staffs and assembly plants by the Army in testimony of Maj. Gen. Oliver P. Rohs, assistant chief of air staff for material and services.

Prior to the war, no manufacturers were invited to bid on prototype competitions for planes of type specified by the Army. Wright Field would specify general characteristics desired, from which the manufacturers would design and build a prototype or model plane. These "C" jobs would then be scored on a point system, and production contracts issued on that basis. The prototype of the successful manufacturer would be bought by the Army, generally at the cost of a production model. Other manufac-

turers were notified with the award and development of a prototype, in which their only hope to occupy was in sale of the model in production quantities to a foreign government.

The successful manufacturer could provide development costs to profit from production models, since sales would be a source of development from \$50,000 and more for a fighter to several million for a heavy bomber.

Under the present policy, knowledge of performance must be taken up in commercial activities of the manufacturer. Some manufacturers expressed belief that prototype competition would not be as necessary in post-war years because of better knowledge of performance measured from the drawing board, they point out that there is no assurance that this will be the case, and that some valuable material should be secured to meet the engineering needs for military ships.

Next 6 Months May Clarify Aims Of West Coast Aircraft Industry

"Confidential" customer previews of mockups of post-war planes is gradually giving form to general picture.

By SCHOLER BANGS

There is every reason to believe that within the coming six months the West Coast aircraft industry will have defined with fair accuracy its post-war objectives. It will not be so much the result of their desire to talk post-war while still in military production as of competitive pressure.

Opportunity to capitalize on public interest in specific types of aircraft will be a certain lure to publicity directors to talk about company plans for building such types.

Previews—"Confidential" customer previews of mockups of post-war airplanes, tender planes, and personal aircraft both airplane and helicopter, will not remain "confidential" for any extended period. A leak in one company's personal plane ambitions will tempt other companies to disclose their own plans.

To date only a limited disclosure of post-war planning has developed through Douglas airline executive, Convair's display of a "480-passenger" design mockup, Lockheed's

Candellion production and "Jetco" on the company's much bigger Constellation, Northrop's continued activity in flying wing development, Boeing's Stratocruiser project.

Personal Planes—Major company interest in personal aircraft has gained expression only in Convair's West Research Laboratory experiments with helicopter and roadable plane designs, and the declaration by Lockheed's Bill Hibbard, vice-president and chief engineer, that he feels the helicopter will be the answer to personal aircraft needs.

Successes of other Western builders in discussing personal aircraft plans may be attributed to a lack of definite knowledge of what the public wants, the price it will pay, and the market potentials that will exist under competition with light plane manufacturers whose identities have been firmly fixed in the public mind.

One West Coast builder hesitates to announce plans for a 1949-50-

'Giro vs 'Copter

All the talk about helicopters has left almost forgotten the airplane, which once received the same dubious accolade now awarded the powered rotor. The airplane can match many of the helicopter's performance characteristics; with normal headwind it can land in a space as small, and even with greater jump takeoff it could clear the greatest obstacles.

The gyro has the advantages of simplicity, and of low weight and cost because it needs no engine cooling pipes, no engine cooling pump, and fewer controls—all necessary to the helicopter.

Development of the 'gyro is strong ahead quickly, with the prospect of considerable post-war improvement in performance and reduction in cost. It could and may become a dominant competitor in the new to meet public demand for garage-based aircraft.

gyro four-passenger plane because, by the time he can be in production it he could be in production the show, it turbine power may have advanced to a degree where he may have to revise his model's structure and entire performance specifications, now based upon a small reciprocating power plant.

Public Safety—All corrective steps have not been taken by the time this has been printed, commercial airlines may be demanding stricter control of military aircraft flying over civil airways.

Airlines hesitate to complain publicly of instances in which pilots of their transports have had to dive and dodge to escape collision with military planes. Yet it has happened to such a degree on the West Coast that pilots are "on edge" with watchfulness.

"Fiasco" Made—At the Civil Aeronautics Board hearings in Los Angeles a military pilot testified that P-41 night fighter pilots using radar had made "passes" at military cargo planes following the airway between Los Angeles and San Francisco. He didn't know whether they had made similar mock attacks upon civil airplanes.

Airline officials feel that responsibility for eliminating this wartime hazard rests squarely with the military and urge more passivity, regardless of rank or combat record, of military pilots who stray from flight plans or dive on and crowd airlines.

PRIVATE FLYING

Republic Develops Four-Place Amphibian for Post-War Market

New all-metal craft reported to have 130 mph top speed, five-hour cruising range at 205 mph with selling price under \$4,000.

By ALEXANDER McSURELY

Republic Aviation Corp., at Farmingdale, L. I., has given other personal plane builders something to shoot at, with the announcement this week of the new Republic all-metal four-place amphibian, designed to sell for less than \$4,000, with 130 mph top speed, and five-hour cruising range at 105 mph.

Best information available indicates Republic has the first four-passenger post-war personal plane design, already flying, in the field, although at least a half-dozen other four-passenger designs, all landplanes, are in various stages from drawing board through mockup to partial assembly, in other factories.

"Thunderbolt" Amphibian—Tentatively called the Thunderbolt amphibian, the new plane is of interest not only to post-war flyers, but has aroused Army and Navy interest for its possibilities for sea rescue work.

A roomy, comfortable cabin with three doors offers interior appointments similar to those of the modern passenger automobile. Upper half of cabin is principally of

plexiglas, affording excellent visibility. A full cantilever wing is placed at top rear of cabin, where the 175 hp Franklin aircooled six-cylinder piston engine is installed. Location of engine and propeller behind cabin insures greater safety in landing and docking, protects the powerplant from water spray, and makes for reduced noise and better forward vision.

17 Inches Draft—The hull of the amphibian is designed to permit easy landing or takeoff from water with only 17 inches draft required when plane is fully loaded. Biplanar floats are suspended from wings. Vacuum-operated slotted wingtips make possible landings at 50 mph. Main landing wheels retract into wells in side of cabin, and a small tail-wheel, just below the high clipper-type tail, completes the land gear.

All-metal, except for fabric-covered control surfaces, the Republic Amphibian, in one of its completed plants in a trend in smaller plane manufacture toward all-metal fabrication which has been noted in many recent announcements.

Specifications

Secondary data announced for Republic Amphibian. Corp's four-place amphibian, designed as a post-war personal plane. Gross weight—3900 pounds. Wingspan—38 ft. Length—26 ft 6 in. Height—10 ft 6 in. Cruise speed—130 mph. Landing speed—60 mph. Cruising speed—105 mph. Power—175 hp Franklin Franklin six-cylinder piston engine. Range—5 hours. Construction—all-metal except fabric-covered control surfaces. Design—high-wing cabin monoplane, with retractable landing gear, vacuum operated slotted wingtips, full cantilever wing with single wheel supported wing-floats.

The plane has a 36 foot wingspan, 38 feet 6 inches overall length, and is 2 feet 7 inches high on its wheels. Its gross weight figures at 3,900 pounds.

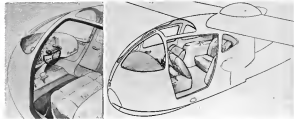
Quantity Production—The plane, now flying, redesigned for quantity production, may still be altered considerably before it goes on the market, as Republic engineers continue to seek ways to improve it and to reduce its production cost. Alfred Marcher, Republic president, points out:

It has been developed from a design by F. H. Spencer, Republic engineer, credited with having more experience with single-engine amphibians than any other pilot. A plywood and fabric covered prototype amphibian, powered with a 125 hp engine, and seating two with a third "jump-seat" in the rear, has flown several hundred hours in tests leading up



FLAK-TORN LIBERATOR FLIES ON:

German AA-fire gouged the inboard section from the wing of a Liberator B-24 during an attack on the submarine pens at Toulon before the capture of that French port.



Sketches Show Amphibian Interior: Automobile-type interior fittings and instrument panel of new four-

place Republic Thunderbolt Amphibian are shown in the above drawings.



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Parks Plans Course For Women Pilots

First of series of 12 weeks' study at Alabama Institute of Aeronautics, leading to private pilot's license, to open Jan. 8.

Alabama Institute of Aeronautics, at Tuscaloosa, will open a series of 12-week courses for young women, leading to a private pilot's license, on Jan. 8, it is announced by Oliver L. Parks, president, and Walter P. Truette, vice-president and superintendent.

Primarily designed to interest young women seeking a working knowledge of aviation for personal flight, the course includes 60½ flight hours, 185 hours of classroom work, and 60 hours of physical training. Ground school subjects include: aeromix, meteorology, flight civil air regulations, instruments, procedures, general service of aircraft, radio, navigation, and aircraft engines. Regulations must be graduates of high school or the equivalent. The students will be housed in modern dormitories and will use the 350-acre Hargrove Van de Graaff Field of the Institute.

Trained Air Cadets—Prior to cancellations of the school's Army primary flight training contracts, AIA had been training AAF, RAF, and Free French cadets, CPTP and WTS flight students, for the last five years, with more than 250,000 hours of flying time at AIA field. The resident flight school for young women is opening to satisfy an increasing demand for such a program, according to Parks, and to complement the aeronautics program offered by the AIA's sister, Parker Air College, East St. Louis, Ill., which has always limited its enrollment to men students, and its curriculum to the more technical aspects of aviation including aerodynamics, engineering, operations engineering and maintenance engineering.

Subsequent opening dates for 12-weeks courses are Feb. 14 and Apr. 2. Prospective registrants may obtain additional information by addressing the director of admissions at AIA.

Eligible for C Cards

Civil Air Patrol pre-flight instructors are now eligible for C gasoline ration for their cars, if needed for travel to and from the place where they are giving pre-flight instruction to CAP cadets.



Parks Opens Girls' Flight School: Alabama Institute of Aeronautics at Tuscaloosa, Ala., opened by Oliver Parks, has converted from military training to become a resident flight training school for young women. Above: a group of AIA girl students get instructor's tips about an Ercoupe, on the flightline at Hargrove Van de Graaff field. Below: a general view of trainers and hangar at AIA.



Office of Price Administration has ruled. Application for such a gas ration must be certified by a liaison officer of the AAF, assigned to the CAP program. The ruling was made at request of the AAF to facilitate pre-flight training of 350,000 CAP cadets.

Milwaukee Airport

A proposal to restore old Milwaukee Field at Milwaukee to use as a downtown airport is being urged by private flyers in that area, under leadership of Alderman James Collins.

The tract was leveled and surfaced for airport use, shortly after the famous flight of Lewis L. J. Mumford (nephew of Milwaukee) and A. F. Reubenberger, from Oakland, Calif., non-stop to Honolulu, in an "Acme" bi-engineer Fokker, "Bird of Paradise," in 1937 and named for the Army flyer. Situated on the lakeshore, not far from the downtown section, and at the foot of Wisconsin Avenue, the city's major downtown business street, the field is now the property of the harbor commission.

Safety—While large city bridges in the vicinity would constitute a hazard to large planes,

it is believed there is sufficient clear area to make possible its use for private handplanes, with other possibilities for development as an air harbor for seaplanes and amphibians. Studies of its possibilities are being urged, with possible experimental flights to and from the area as a practical test.

Urges Port Program

Predicting 3,000,000 privately owned and operated aircraft and 5,000,000 people knowing how to fly within ten years after the war, Congressman Jennings Randolph, of West Virginia, called for rapid development of ground facilities. His remarks were made before the Dallas Chapter of the National Aeronautics Association.

\$3,000 Now Fields Planned—Discussing his bill, which would authorize appropriation of one billion dollars to be spent over a period of ten years, for development of 5,000 new airports and improvement of 123 existing fields, Randolph foresees 313 new fields for Texas if his measure is enacted, and 110,000,000 for the state to match with its own funds.

The speaker stressed the Dallas master plan for aviation, which

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calls for separating commercial and private flying. The Dallas Chapter of NAA, was recently organized with John E. Williams, hotel man, as president.

Air Trade Schools Study Future Plans

Handicapped by wartime problems, they hope to assure future re-up with Army and Navy, Jones says.

The nation's well-equipped aviation trade schools have fought through a chaotic cycle of rush-room growth, mass cancellation of government contracts, and drastic renegotiation. Those that still operate hope they can survive long enough to help retrain thousands of returning war veterans. They are confident that the G. I. Bill of Rights will bring them stable returns in early post war years. Opponent of criticism who has always been leveled by jealous or worried public school authorities, and faced with the threat of multi-billion dollar bills by Congress to set up government-operated schools for everybody, trade school executives concede that they must clean house to eliminate any taint of racketeering.

Long-Range Tie-Up—That done, they can campaign for a long-range tie-up with the Army and Navy to furnish on short notice thousands of well-trained young men for any national emergency. They have an excellent training record in this war but have not been utilized efficiently or satisfactorily by the services from a standpoint of the schools' ability and capacity.

One of the articulate and best known of the aviation trade school operators is C. B. (Coney) Jones, president of Coney Jones School of Aeronautics. Jones stepped the trade school situation before the National Aviation Clinic and is confident that the air transport industry represents the outstanding opportunity for retraining G. I.'s wishing to remain in aviation who will realize their need for more training.

Job Problem—"There will not be enough jobs for all, but 'the individual who has taken time and money necessary to prepare himself more adequately for a job is certainly going to have a better chance to get it,'" Coney believes. "In the personal ambitions of thousands of young men who have served the armed services of war



CAA REGIONAL HEADS MEET:

Emphasis on government's part in encouraging private flying as well as facilitating commercial air transport was heard at a meeting of CAA regional managers with Administrator T. P. Wright, in Washington, held to coordinate post-war CAA plans. Above, left to right seated, Oves D. Harwood, first region; Al S. Koch, assistant administrator for foreign operations; R. R. Kestly, third region; L. C. Elliott, fourth region; Paul R. Morris, seventh region; William A. M. Bardeen, Assistant Secretary of Commerce, and Administrator Wright, attended. Roward A. Hook, sixth region; John E. Ziemer, assistant administrator; Marshall C. Haysen, eighth region; William E. Kline, fifth region; John E. Beardslee, ninth region; William M. Robertson, second region; and Charles I. Stanton, deputy administrator.

industries has one of the great opportunities for the expansion of the aviation trade schools."

Jones told airline executives they have an important stake in the welfare of the trade school for here, ready-made, they have the training facilities which provide, at what Jones contends is the lowest cost, the personnel which the transport industry will need.

Moreover, to merit public confidence the trade schools, in aviation and all other fields, must fight to develop and maintain their reputation. No trade school can be permitted to function that lingers on the racket which, in the past, some trade schools have been. Many states, such as New York and New Jersey, are moving in the right direction by requiring licenses, which means a strict set of qualifications, inspection by state authorities, forcing out schools which cannot meet higher standards.

Competition—"Public school people often express objections to the trade school, but we in the field feel that here is a real place for some good healthy competition. The fact that the private trade school must be on its toes and offer training attractive enough to bring in students who must pay for such training affords them a leadership in equipment and methods that gives the public schools

nothing to keep up with." Coney praises the CAA approval system which "guarantees the level of instruction."

Trade schools must work for the following program, Jones believes. Approval to purchase, at equitable prices, government surplus training equipment, much of it already at the schools but change of ownership is complicated by complex restrictions.

Widespread cooperation with the military services to avoid waste in maintaining unused facilities at wartime levels.

Support executive, considered legislation like the G. I. Bill of Rights but combat "bad" legislation which would set up gigantic government educational projects.

Operations of CAP In 31 States Listed

Civil Air Patrol is owning, operating or sharing 215 fields in 31 states, according to a recent survey made by the 85 State Wing CAP commanders. Of those, 61 were controlled by CAP in 32 states and others are now under construction.

The survey indicated that of a total of 1,362 fields now open to civilian flying throughout the country, 403 in 46 states would have been closed during the war



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up from 500 cycles of operation to 17,000. Operating range is now from 25 below zero to 145 in the sun. Jack and Heintz engineering has cut starter weight in half... and boosted starter life far beyond previous records.

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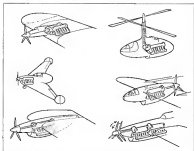

JACK & HEINTZ
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without CAP support and use, not including \$1 contributed by CAP. Major improvements— Besides the fields constructed, CAP has made "major improvements" on 100 other fields in 35 states and has reopened a number of fields which had been closed because of wartime restrictions on other private flying.

The survey lists fields open to civilian flying by states, as follows:

Alabama, 30; Arizona, 14; Arkansas, 20; California, 38; Colorado, 38; Connecticut, 9; Delaware, 1; Florida, 31; Georgia, 21; Idaho, 10; Illinois, 12; Indiana, 45; Iowa, 40; Kansas, 28; Kentucky, 11; Louisiana, 11; Maine, 12; Maryland, 11; Massachusetts, 26; Michigan, 145; Minnesota, 32; Mississippi, 21; Missouri, 35; and Montana, 16.

Nebraska, 36; Nevada, 11; New Hampshire, 10; New Jersey, 6; New Mexico, 32; New York, 74; North Carolina, 25; North Dakota, 9; Ohio, 74; Oklahoma, 45; Oregon, 10; Pennsylvania, 152; Rhode Island, 1; South Carolina, 11; South Dakota, 4; Tennessee, 46; Texas, 156; Utah, 18; Vermont, 12; Virginia, 46; Washington, 20; West Virginia, 10; Wisconsin, 32; Wyoming, 32.



USES FOR RANGER 700 HP. ENGINE:

Interating arrangements possible with the new Fairchild Ranger 700 hp, 12 cylinder engine, suitable for high-powered personal or feeder-line planes, are indicated on these simplified sketches. The inverted-Vee, air-cooled powerplant is adaptable for submerging within the structure of the wing or fuselage. Left, top, submerged in wing; center, used in flying wing; below, conventional wing nacelle; right, top, used with special shaft to power counter-rotating helicopter rotor; center, used as pusher, in turn-tailboom plane; below, in tandem arrangement two engines provide 1400 hp. to turn counter-rotating ste-bi-rod prop.

Asks Clarification Of Aircraft Terms

The term "fixed base operator" should be discontinued because people don't know what it means; "aircraft sales and service" would be better.

This is one of six suggestions made by William R. Kent, president of Southern Air Services and a director of Aeronautical Training Society.

Other proposals made by Mr. Kent for more modern and efficient merchandising of light planes.

1. Avoid misconceptions as to the future plane market. His own estimate is 6500 new planes sold the first year of production and possibly 100,000 annually by 1944. By 1950 he believes the country will have 6500 airports, 222,500 old and new aircraft, and 1,900,000 pilots.

2. Don't concentrate profits to be earned. Very few operators will show a profit of 15 percent after taxes for the next six years.

3. The industry should have a used plane Blue Book like that of the auto industry.

4. Find some answer to the fly-

yourself problem of checking out pilots and ferrying planes back to base.

Briefing

For Private Flyers and Non-Scheduled Aviation.

By ALEXANDER MCGURELY

1. Cross-Wind Landing Gear—Civil Aeronautics Administrator T. H. Wright urged the industry for developing an efficient cross-wind landing gear, as a major need of personal aircraft design, and pointed out that an experimental landing gear of this type, is now being developed in England.

2. After Two-Controls—Next step in simplifying controls so that the average man can fly more easily and safely, might be an arrangement whereby a wheel control will give a complete rudder control as rudder pedals do now. Current two control systems have only limited rudder control, which has been the reason for some objection by seasoned pilots. One competent engineer and designer says the full control may not be too far off.

3. Gullerion Lightplane Diesel—A personal airplane builder in the southwest recently did his utmost to get specifications from Gullerion on the lightplane Diesel which they have been studying for the last several months, and offered to design a plane around the engine, but he didn't get to first base. He reports around the area say Gullerion may have shelved the lightplane engine to concentrate on their larger aircraft Diesel, developed from their T-1400 tank engine. The tank engine turned out 490 hp, but on the basis of comparisons of smaller Gullerion tank and aircraft engines, the new engine should do a best a third more. Maybe some other builder might come out with a lightplane Diesel if the Dallas organization doesn't. There are definite advantages in safety, that somebody might cash in on.

4. Rocket Flight—R. S. Johnson, builder of the screaming Johnson Rocket, expects his 185 hp, three-place model to fly next week, and his larger six-place twin engine plane to be ready for flight early in 1948. Although down around Fort Worth and Dallas are enthusiastic about the performance of the prototype now flying with 128 hp engine.

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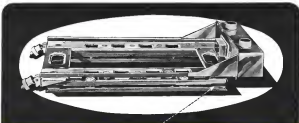
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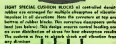
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NEW WAY TO LICK YOUR VIBRATION PROBLEM

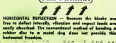
ROBUST SPECIAL CUSHION BLOCKS of controlled viscosity rubber are arranged for multiple absorption of vibration impulses in all directions. These cushions at top and bottom of rubber blocks. This structure dissipates entire load (see below). This design ensures control loading and an even distribution of stress for less absorption results. The system is free to absorb shock and vibration from any direction.



VERTICAL DEFLECTION — The uniform distribution of loading over the entire surface of the rubber block dissipated concentrated loads to shock any shock. Long service life is thereby assured.



HORIZONTAL DEFLECTION — Because this block is free to deflect laterally, vibration and impact loads are easily absorbed. The conventional method of loading a rubber due to a metal dog does not provide this essential freedom.



Robinson Vibrashock® suspensions are radically different from conventional type shock mounts

Robinson builds a complete, fully engineered suspension guaranteed to absorb over 90% of all vibration throughout the entire operating range of the aircraft in which it is installed.

Over 75,000 Robinson Vibrashock suspensions have been built to support airborne radio and photographic equipment for the Armed Services. Other Robinson Vibrashock suspensions are being designed and constructed to support flight instruments and instrument panels.

As a result of competitive tests for use in supporting airborne equipment, the Robinson Vibrashock suspensions have proven superior to all other present methods of shock mounting.

Circle 10

ROBINSON AVIATION, INC.

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WELDING INNOVATION BRINGS 40% INCREASE IN A VITAL PRODUCTION STEP

Ryan technicians, in their endless quest for greater efficiency and lower costs in airplane manufacture, are continually seeking out, improving and putting to new uses equipment and methods not previously used in aircraft work.

Take welding, for example. Ryan attained a 40% increase in efficiency in welding the thin gauge stainless steel used in aircraft by adapting atomic hydrogen arc welding, for the first time, to the fabrication of many important airplane parts and assemblies. New, lightweight electrode holders, specially alloyed steel and the use of a "controlled atmosphere"—all Ryan developments—did the trick.

This resourcefulness is typical of Ryan ingenuity in seeking out and applying newer methods and improving existing ways of doing things. In warfare, this means superior quality and greater production at lower cost to the taxpayer—in big as well as little ways. In production, it will mean lower initial and operating costs for the improved products coming from Ryan production lines.

THE PROBLEM: When stainless steel was introduced in the manufacture of aircraft engine turbine and compressor casings, welding was extremely difficult. Thin gauge stainless steel required a welding process not previously used as it, at the same time, required a shield to be applied to a high level of cleanliness. Welding methods were not then available which were accompanied by welding, keeping the process and process.

THE SOLUTION: Ryan technicians sought out the atomic hydrogen arc welding process, which, unlike oxy-acetylene, does not produce any heat, and may be used with atomic hydrogen. Ryan technicians have used the atomic hydrogen arc welding process in the manufacture of many important airplane parts and assemblies. This method has been used in the welding of stainless steel in the manufacture of aircraft engine turbine and compressor casings. Ryan technicians have used the atomic hydrogen arc welding process in the manufacture of aircraft engine turbine and compressor casings.

THE ADVANTAGE: Atomic hydrogen arc welding is a high speed welding process. It is the most efficient method of welding, keeping the process and process. It is the most efficient method of welding, keeping the process and process. It is the most efficient method of welding, keeping the process and process.

THE RYAN WAY
TO BUILD WELL
1922-1944



RYAN *Airplanes*

Ryan Aeronautical Company, San Diego—Hawthorne, Aircraft War Production Control, Inc.

DESIGNERS AND BUILDERS OF NAVY FIGHTING PLANES AND EXHAUST MANIFOLD SYSTEMS

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PLANNED
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Through
Production
Ingenuity

THE AIR WAR

COMMENTARY

Superfortress Earns Title As Key Strategic Air Weapon

Six months of operations, following early shakedown bombings of Jap military and industrial targets, reveal giant B-29 as formidable weapon to carry weight of air attack to Nippon.

Six months ago the B-29, far-vastest resident, was simply the Army's warlike secret. On the second evening of the first shakedown operation against the rail yards and military warehouses of Bangkok, capital of Siam, nine days later the B-29 and the Twenty-ninth Air Force burst on the world in connection with the first mission against the Yawata steel works.

July saw two more missions, August two (both of them double-pronged, one from bases in China and in Ceylon, and the other, as a daylight and night mission against Fuzhou), two more in September, both against Anhui steel works, Manchuria, and targets in Central China; October, four, including three in one week against Fuzhou, the fourth being the first major blow against the big steel works, the first of the series, at the end of Nov. 3 and 24 there were five more missions, in a stepped-up pace, despite very bad weather.

Range Cleared Out—The six months of operations have served to develop the giant bomber into a strategic air weapon quite in a class by itself, the only true very long range bomber in the world. The figures are impressive: Bomb load, up to 16 tons for shorter runs, radius of action, 2,000 miles or 4,000 miles round trip, with lighter bomb load, speed, over 300 miles per hour, operating ceiling, between 25,000 and 30,000 feet, above the effective ceiling of all but the very latest Jap fighters, with pressurized cabins for crew comfort and efficiency, total fuel capacity, 4,000 gallons, although obviously this is not an operational figure.

The principal "bug" to be worked out were in connection with the big Wright R-3350 Cyclone 18's, and the intricate system

of defensive armament. The latter makes the B-29 by far the best defended bomber in the world, and second enemy planes shot down and damaged during the past two months especially, since for itself. Further improvements are being made in the engines, but they have come a long way from the beseeches of a year ago. Production-wise, the picture is also much improved on account of the excellent record of Dodge, Chicago, and enlarged facilities at Wright, Peterson, Wright, Lockland is expected to be in production on the big engine early in 1945.

Central Fire Control—For protection against enemy fighter attack, the B-29 has a super-system of remote control turret developed by General Electric. There are 16 or 12 high velocity 36-mm. guns, with 2 or 4 in upper forward, 2 in lower forward, 2 in upper rear, lower forward, lower rear turret and tail mount, with a 30 mm. cannon also in the tail. The gunners sit at sighting stations or control desks in the fuselage, and operate the guns with automatic correcting sights. They have plenty of room for freedom of action and are away from the noise and shock of the guns themselves.

Each gunner has periscope, all on one particular turret, but in an emergency can pass on control to another gunner. As in the case of the bombardier, the gunner feeds certain information such as his plane's speed, wind drift, etc., into his computer (the "little black box"), frames the enemy fighter, tracks him for a second or two and then can blast away. It is this system which would win the same Air Battle for the big B-29 bomber.

Photographic Version—Effective strategic bombardment is utterly dependent on accurate photo-

graphic reconnaissance. In the European theater this has been supplied by the British Mustangs and the P-47 version of the Lockheed Lightning, the latter also having earned the bull in the South-west Pacific. Getting the stuff over Tokyo and industrial Japan generally is another story, however, with operating bases some 1,000 miles away. Here is the key to the Tokyo blitz from time to time during the first three weeks of November, when an F-4 Superfortress later identified as "Tokyo Rose," loaded with automatic cannons and normal armament for defense, cruised high over industrial Nippon and shot the works. Photographic intelligence officers turned the resulting photos to the best pictures of enemy targets ever taken. Despite the tip-off as to what was coming, including the general location of our operating bases in the Marianas, the results of the first big Superfortress Tokyo mission were ample justification.

Strategic Targets—The 31st Air Force's campaign against steel production which extended from June 15 to Sept. 1 has given way to a drive against Japan's aircraft industry, which as was the case in Europe, will have a profound effect on future combined operations in Luzon, Formosa, China and Japan.

The Oct. 14 mission against the huge aircraft manufacturing and assembly plant, modification center and training base at Okayama, Formosa, was reported to be the first example of strategic bombardment in the war to date. Later scores of the buildings and installations were destroyed or heavily damaged, carrier planes also having had a hand in the 100 strikes. The second B-29 raid on the 16th left hardly a handful of buildings undamaged. The great aircraft assembly plant and engine manufacturing works at Chong Bay, near Nagasaki, was attacked three times between Oct. 25 and Nov. 20, with results from fair to excellent. This huge installation, if not knocked out already, will be hit again until it is.

It is also significant that the main target on the first Superfortress Tokyo mission was the vital Nakajima aircraft and engine factory. The 31st Air Force's drive against China and especially the 21st in Japan are now in a position for a one-two punch that will eventually make Japan groggy.

—NAVY/AFS

PERSONNEL



R. L. Kluge (photo) has been appointed senior engineering representative on the Pacific Coast for TWA's operations and Western Air, Inc. He has been TWA's superintendent of aircraft engineering and will be replaced in that post by E. A. Walker, previously senior engineer in charge of the power plant group. Kluge will maintain an office at the Lockheed Aircraft Corp. in Burbank, but will spend some time in Kansas City working on the Boeing conversion program. He has been with TWA and its predecessor Aero Corp. of Calif. for 15 years.

C. J. Bentley, assistant superintendent of salvage at Consolidated Vultee Aircraft Corp.'s Fort Worth Division, has been appointed representative of salvage at the plant, succeeding C. G. Skaller, who resigned. He joined Convair at Yale Field in 1941 and recently was transferred to Fort Worth.

At the Miami division of Consolidated Vultee Aircraft Corp., **Mrs. Viola Foster** has been appointed new chief assistant and will be



Foster Greenman

a division staff member. **Julia Greenman** takes over the post of superintendent of salvage at the division. Until his transfer to Miami, Greenman held a similar position at Convair's Elizabeth City Division.

Ralph Hewlett has been named assistant of TACA Airways in Central America. He was recruited for the Brazilian division of Pan American Airways from 1934 to 1941. Hewlett will be stationed in TACA's Tegucigalpa, Honduras, office and is leaving the U. S. soon for Central America.

Warner H. Hord has been named chief of the rules and advice division of the commission bureau of the Civil

Aeronautics Board, replacing **Richard F. Menner**, who has joined Pan American Airways as the representative of the representative of the War Production Board staff of the government policy division specializing in recognition of war contracts. Prior to that he was an assistant professor of aeronautics at Tulane University and head of the department of Commerce of Central State College, Edmond, Okla. He received degrees from Oklahoma A. and M. college and Harvard Graduate School of Business Administration.

New appointments at Western Air Lines include **Nelson Malloy**, former district traffic manager of Las Vegas, as new traffic manager for



Malloy

Stroman

Rapid City and surrounding territory for Western, and **Verona Wells**, former traffic and publicity representative in San Francisco, as district traffic manager of Las Vegas.

Richard W. Stroman has been named purchase agent at the Keesey plant, Elmer Division of Thomas A. Edison, Inc. Prior to his affiliation with Edison, Stroman was with Curtiss-Wright Corp.

William B. Smith, an airline executive for 14 years, has been named assistant to the president of Northwest Airlines.



John H. Smith, newly certified Boston-New York route. In 1933 Smith was with Lockheed Aircraft and joined Eastern in 1939 where he remained until his present affiliation with Northwest.

J. Eugene Drummond, experimental engineer, has been appointed assistant factory manager of Tunkan



MEET AT PEARL HARBOR:

Least, **Conde Jay Bright** Hancock, well known in Naval aviation, met her brother, **Conde Cooper Bright**, who has been stationed aboard an aircraft carrier, at Pearl Harbor. Commander Hancock headed the editorial research department of the Navy Bureau of Aeronautics for several years before joining the Women's Reserve.

Italer Downing Co., Canton, O., succeeding **H. M. Bailey**. He has been chairman of Industrial Salvage for the War Production Board in the Central-Mountain area, during the critical scrap shortage.

T. Kelly Pierce has been named general manager of the Diamond division of Partridge Engine and Aircraft Corp., specializing in bonded wood and plastic construction. Pierce, previously assistant manager of Diamond, joined in 1940.



Arthur C. Smith is new chief traffic supervisor for American Airlines in Los Angeles. After 14 years with the Union Pacific railroad, Smith joined Continental Air Lines in Denver as district traffic manager, and for the past year and a half he has served that line as traffic manager of mail, express and freight.

PIONEER AIRLINE

is still going strong



Link pilots stand Western Air Lines' first plane, "The Pioneer." (Left to right) Capt. John H. Hord, Capt. John H. Hord, Capt. John H. Hord, Capt. John H. Hord, Capt. John H. Hord, and Capt. John H. Hord.

SINCE APRIL, 1925, when flight operations began, pioneering has been a habit with Western Air Lines, which serves the Pacific Southwest and Rocky Mountain territories. Among features of safety and service which this one company has had a major part in developing are two-way radio communications between planes and ground; the radio compass; passenger service over regular routes; four-engine transports.

FIRSTS —



Western Air Lines installed the first Link Trainer in 1937, for the instruction of pilots in instrument flying. When the company established its military training division, three more Link Trainers were installed. Western Air Lines' regulations require that all co-pilots take at least four hours' Link Training every month...captains and reserve captains at least two hours' "refresher" courses monthly.



Among the first pilots with whom Western began was James James, New York President in charge of Operations. He later stated: "No single device has contributed more to the safety of modern aviation than the Link Trainer."

Link Aviation Devices, Inc.

Registered New York U. S. S. S.
LINK AVIATION DEVICES COMPANY, LTD., Lancaster, British Isles
Link Trainers, Aviation Simulators, and other products contributing to the safety of flight

NEW OHMITE

ARMY-NAVY AIRCRAFT RHEOSTATS

with New Improved Control Protection

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AN-R-14a
(Drawing AN3155)
SPECIFICATIONS

Smooth, Close,
Dependable
Control Under
Every Service
Condition of
**HEAT COLD
HUMIDITY
ALTITUDE
SHOCK
VIBRATION**

These new Ohmite AN Rheostats are light in weight—much lighter than the allowable weight specified. Meet self spray corrosion test. Operate satisfactorily in the temperature range from -55°C (-67°F) to $+70^{\circ}\text{C}$ ($+158^{\circ}\text{F}$).

Here are the new approved Ohmite Power Rheostats for aircraft, made in accordance with the latest Army-Navy Aeronautical Specifications. These units have the advantage of many time-proved Ohmite rheostat features plus new, improved control protection. They are rugged in design and construction to provide uniform electrical and mechanical control . . . and assure utmost dependability . . . under all operating conditions.

Two sizes: Model "J" 50-watt and Model "H" 25-watt. Linear or Taper wire-wound, in various resistances, with "off" position, as required. Totally enclosed in a compact, corrosion-resisting metal container. Complete with knob as shown. Write, wire or phone for further information.

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PRODUCTION

Boeing Converts Seattle Plant From B-17 to B-29 Production

Project, already past half-way mark and expected to be completed early next year, will bring total of units devoted to vast Superfortress program to five.

By SCOTT HERSHEY

Necessity for increased production of Boeing's B-29 Superfortress is pointed up by the Tokyo attack and the disclosure of the activation of a second bomber command under the 20th Global Air Force.

Striking power of the command is emphasized by the fact that more than 100 Superfortresses took part in the first attack on Tokyo direct since Gen. Jimmy Doolittle led his men off a carrier in a spectacular raid on the Jap capital.

Attacks to Increase. The recent demand by Gen. Curtis LeMay, 5th Bombardment Command, that the new 32nd must have ever-ready replacements and also that the force and fury of future attacks on the Jap homeland will increase. The objective of the new air offensive which struck Tokyo for the first time in real force is the destruction of Japanese industry.

And as the air force begins this destruction, the aircraft manufacturing industry here at home is intensifying its output of the B-29. The task of converting Boeing's No. 2 plant at Seattle, birthplace of thousands of B-17 Flying Fortresses to B-29 production has passed the half-way mark and will be finished early next year.

Five Plants Included. With the completion of the conversion, five plants—three Boeing, one Martin and one Bell—will be completely devoted to this nation-wide production program, perhaps the greatest ever put behind a single implement of war.

Under the cooperative industry arrangement which has existed since May, 1941, production of Boeing B-17's will continue at the Douglas and Lockheed plants in California.

The scope and complexity of the conversion job in Seattle from B-17's to B-29's is almost without parallel in industrial history. While it is being accomplished, B-17 Flying Fortresses are continuing to come off the lines at a high production rate until the conversion is complete.

Reconstruction. The big Seattle plant will be integrated with a second Boeing plant at nearby Renton. It will be devoted exclusively to output of B-29 major subassembly parts, such as wings, nose sections and gunner's compartments. These parts will be trucked to the Renton plant, where all final assembly work will be done. Boeing officials say that the two plants thus operating as a team, will be capable of producing twice as many Superfortresses as

would be the case if completed planes were to be built at each plant.

Because of the necessity of keeping up production during the change-over, the conversion has been a gradual process, starting last April and scheduled to be completed next March. Inasmuch as all available floor space was devoted to B-17 production, the conversion had to begin by squeezing in a B-29 jig here and there between B-17 jigs and assembly lines. The Flying Fortress work gradually was concentrated into smaller areas while B-29 work expanded. Ditch juggling was necessary in personnel as well as in factory space since B-29 workers had to be trained gradually for their new job, inasmuch as only a few at a time could be removed from B-17 work.

Assembly Lines Reduced. The plant's three B-17 assembly lines were reduced to two, and then to one as conversion progressed and space was needed for B-29 jigs. Some assembly shops had to be moved to temporary locations, and production crews had to be broken up, some remaining on B-17 work and others transferring to the Superfortress line.

The entire B-29 program dwarfs anything previously attempted in aviation. It embraces hundreds of subcontractors, vendors and suppliers as well as the five huge



Boeing Bomber Conversion: Production of B-17 Flying Fortress and B-29 Superfortress parts is going on side by side at Boeing's No. 2 plant in Seattle which is undergoing conversion from B-17 to B-29 work, a project which started last April and will be finished next March. In this new picture, B-29 wing jigs are shown in the foreground while beyond can be seen what remains of the long line of B-17 tail sections which formerly occupied this area.

WHAT HAS THIS TO DO WITH BROACHING?



TODAY, countless ships plow fog-shrouded seas, hurrying vital supplies to our fighting men. Swarms of planes hum a dirge over the axis homeland. Arid lands are made fertile and productive. Mighty rivers are harnessed to provide power for distant war industries. Propellers — pumps — turbines... modern necessities and conveniences without number... stem from the unknown genius in whose brain was conceived the principle of the screw. The miles of years obscure his name, yet from Odello to Gutenberg to Millennium, developments of this basic idea have, and will continue to, profoundly influence our civilization.

In the same manner that so many complex machines, essential to Man's progress, developed from the fundamental principle of the screw, so too, has broaching developed from crude tools capable of limited uses, to mighty machines capable of performing metal removing operations with speed and precision, in an almost endless variety of shapes and sizes... and making them quicker, cheaper and BETTER!

The first broaching machines were essentially either presses, and were generally used to cut keyways in pulleys and gears.



LAPOINTE

Machine Tool Company
ROCKFORD, MASSACHUSETTS, U. S. A.

THE WORLD'S LARGEST AND LARGEST MANUFACTURERS OF BROACHES AND BROACHING MACHINES

plants where the planes actually are built.

In addition to the Boeing plants at Seattle and Renton, there is a third Boeing plant at Wichita, near production unit of the B-29, the Glenn L. Martin plant at Omaha and the Bell plant in Marietta.

Convair Develops Knock-Down Hangar

Development of a prefabricated hangar designed to facilitate servicing of aircraft in remote areas is reported by Consolidated Vultee.

All parts are prefabricated in San Diego and numbered in accordance with legends eliminating reference to blueprints in assembly operations. Consolidated says that, with minimum equipment and a crew of eight men, one of the structures can be erected in three days. It will withstand an 80-mph gust or a steady 70 mph wind.

Designed for "Liberator"—Except for the front, which is a winter and fire-proof curtain, the hangar is of metal. Although it was designed specifically to accommodate Liberator bombers, it can be used in servicing smaller aircraft. Facilities of the hangar include

all work benches and tools normally required for servicing and repairing aircraft. Also, the hangar could serve as a barracks building for ground crews in areas where conventional housing is not available.

Beech "Welcomes" Bendix Name Suit

Ernest R. Beech, president of Bendix Aviation Corp., has stated that Bendix Home Appliances, Inc., which has filed suit against his company, has only a limited right to the use of the name "Bendix" in the home appliance field.

Bendix Home Appliances has filed suit against Bendix Aviation in the New York Supreme Court seeking an injunction restraining the aviation concern from using the name Bendix in connection with sale of radio sets for home use.

Holding Asked on Name—The complaint, alleging that Bendix Aviation proposes to market "Bendix home radios" asks damages and requests that the court decide that Bendix Home Appliances has the right to use the name Bendix in connection with sale of home appliances of its manufacture.

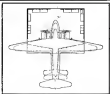
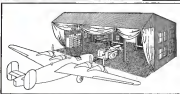
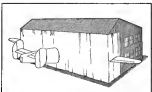
Beech said that since his company and its predecessors have used the name Bendix continuously since 1913 on a variety of products of its manufacture, including radio equipment, he welcomed the opportunity to obtain in the courts clarification of the right to use the name Bendix on manufactured products.

Martin Production

Glenn L. Martin, president of the aviation company, told stockholders that the firm is ahead of its revised production schedules.

He said that before the German armistice cessation there was a premature conviction on the part of many of his employees that the war was about over and the company lost many people who left war work for peacetime employment. The manpower situation has improved however, and Martin reported that it now seems well understood that they will need many more employees—not fewer—after Germany falls.

Dividend—A semi-annual dividend of \$1.50 on the common stock was declared, payable on Dec. 31, 1944, to stockholders of record Dec. 15.



Consolidated's New Prefabricated Hangar: Developed by Consolidated to service aircraft in remote areas, this prefabricated metal hangar built with water and fire-

proof front curtain can accommodate planes other than the Liberator for which it was specifically designed. Photo and drawings show details.

Mosquito Equipped With Small Cannon

The British have disclosed that Mosquito bombers have been equipped with a six-pounder gun similar to the 75 mm. gun mounted on North American B-25 Mitchell mediums.

The British gun is mounted under the fuselage just to the right of the centerline, and has been in operational use for a year. Its chief use has been against Nazi shipping, particularly submarines. Attacks on submarines have been carried out even in heavily-defended harbors, and use of the cannon-driven Mosquito has forced the Germans to defend ships with fast ships and escort vessels where they ordinarily would operate on the surface with impunity.

►"Mitchell"—The AAF and the Marine air arm have been using the Mitchell largely in Pacific operations against Japanese shipping and installations. It carries, in addition to the 75 mm. gun mounted under the left wing of the pilot's compartment, 10 forward-firing 20 caliber machine guns. It is the most heavily armed airplane in existence, with the machine guns furnishing a heavy barrage of covering fire during landing runs. The faster, lighter Mosquito mounts four machine guns



Six-Pounder Mounted on "Mosquito": This British photo shows nose detail of the speedy Mosquito bomber equipped with four machine guns and the cannon comparable to the 75 mm. mounted on the North American B-25 Mitchell.

for the same operation and for normal protective fire against fighters.

Neither the American nor the British cannon has much reaction affecting the aircraft, utilizing special mountings that absorb much of the recoil.

Normal ranges of the American 75 mm. cannon are restricted but the British Information Service mentions the destruction of a Junkers 88 in mid-air by cannon fire at the range of a mile.

New Engine Mount

A new type of engine mount, designed by Douglas Aircraft and used on the company's recently announced A-26 Invader, is now being made at the Mansfield Works of the Westinghouse Electric and Manufacturing Co.

The new mount is reported to reduce the time required for changing an engine from 14 hours to four hours. It weighs 160 pounds and carries the 3,000 pounds of the 3,600 hp. engine. The unit fits into the nacelle section on the wing of the plane. It is attached to the engine and wing at six points, six on the nacelle ring at the rear for the wing and six on the aluminum forward ring for the engine.

►Facilities Repairs—In addition to the fast change feature of the new mount, it is designed to permit a mechanic to crawl inside through a special doorway to make repairs and adjustments to the backside of the engine.

Vote on New Name

Stockholders of Aircraft Accessories Corp. will vote on a proposal to change the name of the company to Avcon Manufacturing Corp. at their meeting Dec. 15. Some company officials believe the present name erroneously implies that the company's business is restricted to manufacture of accessories to the aircraft industry only. They point out that the firm also supplies radio, electronics, hydraulics, railroad and other transportation industries.

AMERICAN INDUSTRY PRODUCES MORE, FASTER, BETTER—WITH BOWSER EXACT LIQUID CONTROL

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THREE MOST CRITICAL MINUTES OF THEIR LIVES



Engines made by Minneapolis-Moline Power Implement Company are protecting the famous heavy-duty 3000 Jumps and the many 3000 line implements working for us and our Allies.

So every minute of an M-M engine's year-long life is important. The most critical are the first three minutes of the initial run, when 75% of engine wear occurs.

Minneapolis-Moline protects its engine during the first run with a Bowser Oil Conditioning System that serves all test M-Ms.

Prepared in less than 10 seconds and heretofore have been completely eliminated. There's no liquidation (no lag), no, too. Previously, from 1 to 5 quarts were used in testing each engine. Now the oil level is only about 50 gallons for each 3000 engine.

Another phase of Bowser Exact Liquid Control—Optimal Feeding System—is pro-



viding equally outstanding service to the engine industry around the world. There is why Bowser, the power in the field, is the recognized leader.

Complete Range of Equipment—More power and underground means up to 3000 g.p.m. capacity. Marine, mobile, portable and construction types for virtually every possible need. When more power, we will engineer and build the special installation you may require.

Accuracy Minneapolis—Bowser's Success.



Since M-M's engineers and records every drop of fuel before it is dispensed.

Clean, Dry, Safe Fuel—Impurities and low moisture are removed to help the fuel be better dispensed—consequence: increase of clean, dry, safe fuel.

Save a Place—For problem and special requests, or for looking smaller places, Bowser's equipment, flexible, ready to be called here. A Place in a company that's around every corner, always, and continued AVIATION, DAYTON, NEW YORK, INC., Fort Wayne 2, Indiana.



REMOVABLE FIBERGLAS INSULATION:

Thin-thick Fiberglass insulation held in position by snap fasteners and straps is the latest find for Curtiss C-45 Commando transports. The insulation is some 300 pounds lighter per installation than bapok, and can be removed with relative ease when necessary. The disassembled trim cloth is used where needed for retaining insulation against contaminants, such as dirt in the pilot's compartment. The finish in the main cabin is smooth cloth, complete even in roll-down sections.

BUY WAR BONDS



The Place That Means Exact Control of Liquids



Not only has Bowser's war production earned the Army-Navy C-Donor award but helped arm & the service of other companies.



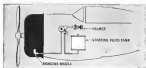
For a hot pilot...frozen by a williwaw

In Alaska, every man who kicks a rudder is a hot pilot—he's got to be. But freeze-bound noses keep even the most resourceful flyers grounded—because to start engines when the mercury plummets below zero often takes hours of hard work.

But now, from the laboratories of California Research Corporation, a Standard of California subsidiary, comes revolutionary new Standard Starting Fluid—to kick the coldest engine into life instantly.

Standard Starting Fluid* ignites readily at low-est temperatures—on compression alone, if need be. It is safe for engines, easy to use, non-fire. The ounce or two needed for each start can be injected through a simple priming system.

The Standard Starting Fluid that helps get air-



craft off the ground is another typical example of the kind of creative research which has made Standard Aviation Gasoline and Lubricants supreme in the sky.

**Until after the war, Standard Starting Fluid will be obtainable only in Alaska.*



STANDARD OF CALIFORNIA

FINANCIAL

Airline Securities Helpful Key In Evaluating Industry's Position

Increase of more than 400 percent in market valuation in last six years indicative of great progress air transport industry has made since 1938.

Market quotations, properly applied, afford a helpful key in evaluating the relative position of the air transport industry as a whole along with that of the separate carriers.

Along in 1936, shortly before the passage of the Civil Aeronautics Act of 1938, it would have been possible theoretically to purchase all the equity securities of the entire domestic air transport industry for less than \$50,000,000. (Based on the market prices of the listed securities of the major companies with the relative business applied to the rest of the industry.) Today, it would take about \$210,000,000 to accomplish the same purpose. United or American, taken separately, now commands a higher market price than that of the entire domestic group back in 1936.

Six Years' Progress—This fourfold increase in a mere six years is the best way to record the airline has traveled in less than six years. This gain can be attributed to infusion of new capital, "ploughing" back of earnings and "hope" in the future.

Despite its tremendous growth, the airline industry is polyanne compared with standard American enterprises. For instance, say new Class I railroad can draw all the domestic airlines combined in terms of capitalization. There are hundreds of industrial corporations, taken separately, which can do the same thing.

Market Above Book Valuation—For the major airlines, market prices have outdistanced book valuations. This is opposite to the trend shown for the nonaircraft where, as a rule, book valuations are certainly higher than market quotations. Usually, new or "growth" industries enjoy premiums in the price of their securities by virtue of the hope for greater profits which may be held forth. The aircraft group, at the

outset, represented market prices well in excess of book valuations and then rapidly proceeded to discount the future as apprehension of a post-war deflation began to appear.

To best depict the relationship of airline market prices to book valuations, the accompanying table has been prepared covering the domestic airlines whose securities are listed on the New York Stock Exchange.

Capitalization—For instance, both Braniff and PCA have the same market quotations—about 9 1/2 per share. This does not mean that the two companies have the same valuations. Far from it: when applied to the respective capitalizations, Braniff is priced at \$18,000,000 compared to about \$5,000,000 for PCA. It is, therefore, essential to know the share capitalization of each company before accepting a bare quotation as a criterion.

It is essential to observe all valuation possibilities. United and American, for example, have convertible preferred stock issues. It would be a mistake to ignore these issues and merely adjust for their redemption at the call price. American will soon call its 50,000 shares of preferred at \$100 per share. Actually, however, these preferred shares will become 11,000 shares of common to be added to the present series. The conversion rate common is attractive. The same applies to United; although in this instance the pre-

ferred is not being called but a premium exists because of the common selling in excess of the conversion parity. All such conversions dilute the common stock but inherently strengthen the companies concerned as a senior equity is eliminated and the price call on dividends removed.

American sells around \$29 per common share at present, compared with \$23 for United. Yet, United's total market valuation exceeds that for American. It also is interesting to note that United also has the largest book valuation of any of the domestic lines.

Eastern and TWA—It is noteworthy that while Eastern and TWA have almost the same market valuations, there is a decided difference in the book values. Eastern has the lowest ratio of market to book prices in the entire list. This is probably due to the line's extreme conservatism in retaining all earnings and not declaring any dividends. Then too the market premium on Eastern has tended to narrow as the company began to lose its monopoly on the price Atlantic coast route.

These market ratios afford an interesting medium to determine how far out of line market prices may become in relation to actual book values. The most extreme is Braniff, which now enjoys a ratio of 2.7. The rest of the group appear to be very much in line with one another, varying as very slightly about 2.0. With record third quarter and sustained profits during the current month, book values have been greatly augmented over the figures shown.

It is not at all uncommon for securities to sell well in excess of actual book values. The important market influence remains earnings. As long as the air transport operators can generate satisfactory growth and dividend prospects for even modest gains, security prices will remain favored at that level and will give but a passing glance to actual book values.

MARKET AND BOOK VALUATION RATIO
MAJOR DOMESTIC AIR CARRIERS

Airline	Common Shares Outstanding	Common Market Value	Book Value July 31, 1944	Ratio Value
American	1,000,000	\$29,000,000	\$10,000,000	2.9
Braniff	1,000,000	\$23,000,000	\$8,500,000	2.7
Eastern	1,000,000	\$23,000,000	\$11,000,000	2.1
Northwest	1,000,000	\$23,000,000	\$11,000,000	2.1
PCA	50,000	\$4,750,000	\$1,750,000	2.7
TWA	1,000,000	\$23,000,000	\$11,000,000	2.1
United	1,000,000	\$23,000,000	\$11,000,000	2.1

As of July 31, 1944
*Ratio of book value to market value
*Rounding complete conversion of preferred stock.

House Group Hits CAB Stand Against Air Rights for Ship Firms

Merchant Marine Committee criticizes Board's interpretation of law; bill recommended authorizes Commission to make "final and conclusive" findings as to right of steamship operators to use aircraft.

A new and bitter chapter in the fight by surface carriers to get into the air was written last week by the House Merchant Marine and Fisheries Committee, whose strongly-phased report asking a place for steamship lines in aviation pointedly criticized the Civil Aeronautics Board's interpretation of the law that has been the obstacle to each party's aims.

Unofficial comment from high Board sources viewed the report aside as advocating a division of air traffic that would result in a terrible blow to the national prestige in the form of subsidies. One spokesman said the committee had taken a "patience, narrow and unjudicious" view.

Proposed Bill Sketched—Members attended the Committee's decision to recommend passage of a bill (H. R. 8587) authorizing the Maritime Commission to make "final and conclusive" findings, regardless of the Civil Aeronautics Act, as to the right of a steamship operator to use aircraft "either in connection with or in lieu of vessels."

As the Board is felt that this would break the back of the Civil Aeronautics Act, since the finality of the Commission's decision on air operation by steamship companies, if the proposed measure becomes law, would deprive the Board of its jurisdiction in such cases.

Rep. Alfred Bulwinkle, chairman of the aviation subcommittee of the House Interstate and Foreign Commerce Committee, feels that the bill, introduced in September by Chairman Brand of the Merchant Marine Committee, would lead to an undesirable division of control over American flag operations in international aviation.

Key Opposes Measure—Chairman Lee, of the influential House Interstate group, is opposed to the measure.

ure, a circumstance believed sufficient to prevent its reaching the floor of the House before the present session ends. In the unlikely event it should be pushed through the House, moreover, a Senate already up to its neck in controversial legislation and with one eye on an early adjournment would hardly be in the mood to plunge into a new major issue. Lee commented briefly on the Merchant

Marine Committee's action that "I don't think anything will come of it at this time."

The long-awailed interim report by the Merchant Marine Committee on the merchant marine in overseas aviation amounted to a compendium of arguments already advanced by steamship interests in their fight for air rights. There were some contradictions. In its conclusion, for example, the committee said CAB has ample authority under the act to grant air certificates to steamship companies, but elsewhere the Committee and recommendations to it that the law would have such authority, made when the 1938 Civil Aeronautics Act was before the House, have since "turned out to be a snare and a delusion."

CAB Criticized—The Committee believes, the report said, "that the Civil Aeronautics Board has unwittingly fallen into the grievous error of regarding itself as the godfather of the air lines rather than the impartial judge between all classes of applicants for certificates."



BRANIFF STARTS INTERNATIONAL CARGO SERVICE:

Braniff Airways started an international air cargo service between points on its domestic routes and Mexico, Dec. 1, through the Laredo, Texas, gateway. Cargo in Mexico is being handled by Compania Mexicana de Aviacion (CMA), Pan American Airways affiliate. Cargo will clear U. S. customs at Laredo, and Mexican at Nuevo Laredo.

NOTICE

A DISTINGUISHED NEW NAME for a DISTINGUISHED OLD SCHOOL, A NAME THAT, IN THE SUPREME TEST OF WAR HAS COME TO SIGNIFY A NEW HIGH STANDARD IN AVIATION TRAINING . . .



When Major C. C. Moseley, president of Cal-Aero Technical Institute, was selected by the Army Air Forces as one of nine men which appeared to conduct the ordered expansion of training Army Air Force pilots in civil schools, the name "CAL-AERO" came into existence. So successful did the plan prove that the Army went entirely out of the business of giving primary training, and ultimately 64 such schools, the majority of whom possessed all "CAL-AERO" training up throughout the nation. At the same time and under the same personal supervision of Major C. C. Moseley, the great school which had trained thousands of civilians as mechanics and engineers since 1927, and that hitherto well known as CAL-AERO TECHNICAL INSTITUTE was training 1,500 Army Air Force ground crew mechanics. It was the first school—and for a long time the only school—in the west, to be selected by the Army as this training.

With an unbroken and unexcelled record of efficiency and safety in training more than 30,000 Army Air Force pilots, more than 1200 having been designated for value, together with the school's record of training Army Air Force mechanics, all under the personal supervision of Major C. C. Moseley since 1927, it was his record in planning for the post-war period that three schools came under the distinguished name of "CAL-AERO."

Handled by civilians for distinguished service in training those men for the Army Air Forces, together with continuous service in training civilians for the production lines, CAL-AERO TECHNICAL INSTITUTE continues larger, stronger and more than ever before, on its own airport, Grand Central Air Terminal, in the heart of Southern California's great aviation industry.

So, to you who look forward to a career in AVIATION, you will find the best to be had in the way of specialized training in Aeronautical Engineering and Minor Aviation Mechanic, at "CAL-AERO" Technical Institute.

Today, as in the past, civilian students continue to pour into this school from many states and foreign countries, despite the difficulties of war time travel. In one recent week, two students flew far south India and others far north India, and returned safely. Latin America and China both are heavily represented. Remaining service men, anxious to fit themselves for an outstanding place in the golden age of Aviation, which is certain to follow the war, likewise are coming up steadily.

What day school has done for its graduates, it can do for you. Write or mail coupon today for full information about the possibilities of a post-war aviation career.

Flight training is restricted to Army Air Force Cadets but the shortest

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UNDER FEDERAL SUPERVISION OF MAJOR C. C. MOSELEY, PRESIDENT AND FOUNDER SINCE 1927

ON OUR OWN AIRPORT—IN THE HEART OF THE AIRCRAFT INDUSTRY

How are you at Chopping Trees?



No, this is no joke. Many businessmen have volunteered to aid the paper shortage by postponing vacations from their computers in the timber country, helping cut on the main power problem in the paper pulp industry.

Not that you have the time to do this. Nor that tree-chopping is exactly in your line. But, until the man-power shortage in this vital industry is over, warf cut armed forces no longer are spread all over the world where food, ammunition and medical supplies must be shipped them in paper protection.

wrappers, there is a chopping job you must do. You must chop the use of paper in your business.

See, you've done plenty of this in the past months. But right now the need for paper is greater than ever. So the government asks you again to conserve paper usage in your firm, see if you can't make even further savings.

And don't forget that baling waste-paper and sending it on a repurchasing job is a most important part of the paper conservation job.

**Remember—
PAPER IS
WAR POWER**

USE LESS PAPER—SAVE ALL WASTEPAPER

This advertisement contributed by this publication and prepared by the War Advertising Council in cooperation with the War Production Board and the Office of War Information.



fit of thorough design to meet low-cost operations."

Parks expressed the view that engineers and cargo-experts should not be in too much of a hurry to rain out strictly cargo planes.

Even though we all have had a good deal of cargo experience during the war, none of us is in a position to dictate commercial cargo designs at this stage of the game."

Puts Job Up to Engineers.—W. W. French, director of cargo sales of TWA, picks the rate structure back into the laps of the engineers. "We salesmen haven't a third in the world to sell unless we get a vehicle that has been engineered to death and to the far limits of reliability and lowest possible costs of operation." Although his paper was prepared on the subject of specialties in air cargo, he covers the transportation specialties are transitory at best. At one time, he declared, airlines thought news magazines were a great potential for air shipment. Now, however, the majority of the publishers has swept away that possibility by decentralizing printing operations.

The types of planes offering the greatest hopes for air cargo and feeder operations deal with in a paper prepared by Herb Rawdon, assistant chief engineer, Beech Aircraft Corp., and Dr. Robert J. Nebenzar, vice-president and chief engineer of the Transwestern Roubidoux Products Corp. Rawdon emphasizes the importance of low wing loading to cut down the size of airport required, and increasing importance of wheel brakes for the same reason. Lake Nebenzar, Dr. Nebenzar states cargo planes should be high wing types. He also advocates twin boom, twin engine aircraft with a wing loading of between 20 and 35 pounds.

Gallo Joins TACA

Charles L. Gallo, Transcontinental & Western Air traffic official, has been named general manager of TACA's Central America Division, with headquarters at Tegucigalpa, Honduras. He will be in charge of the line's operations in Central America, Mexico, Cuba, and the charter service from Central America to Miami.

E. Lee Tolman, TWA executive vice president, says Gallo will be on loan to TACA, in which TWA holds a considerable stock interest. Gallo had had ten years' experience with TWA in various traffic and air route activities.



Charles L. Gallo

SHORTLINES

- Nevada-Pacific Airlines, Inc., intrastate service, has been granted an additional 45 days from Nov. 19 to start passenger and express service over a line between Reno and Las Vegas. The time extension was approved by the Nevada Public Service Commission, who note franchises for interstate operations Nevada-Pacific presented a case for interstate routes to CAB at the recent West Coast hearings.
- National Airlines, in a letter to the Railway Express Agency, has urged reductions in air express rates, according to H. S. Parker, Jr., NAL vice-president. Such a decrease would be certain to encourage trade, Parker declared. If National's Caribbean applications were granted, the line hopes to extend cargo service at lowered rates over those routes.
- New schedules added by PCA, Dec. 1, include an early morning direct Washington-Detroit flight with one stop at Pittsburgh, an evening Norfolk-Jaffris flight via Washington and Philadelphia, another daily flight from Birmingham to Buffalo via Hamilton, Chattanooga, Knoxville, Cincinnati and Pittsburgh, and two new daily non-stop trips between Pittsburgh and Detroit, with an elapsed time of 50 minutes.
- Air Express Division of Railway Express Agency announces that air express shipments in combined airmail service increased 11.6 percent during the first three months of 1946 over the 1945 period. During the first nine months of 1944, 327,013 individual shipments were handled, compared with 302,532 for the previous period.

CAB ACTION

- An hearing date for the New England case (Docket 194) at a scheduled emergency session, during December 10, 1945, has been set. Among documents received by the Board last week was a report of W. H. Davis, Inc., Boston, R. R. Ferry, and Associates.
- The Board scheduled for 1946 an opportunity to examine the proposed changes in the domestic segment of AM 27 AM 10 and AM 10 AM 10 routes. The Board also scheduled for 1946 an opportunity to examine the proposed changes in the domestic segment of AM 10 AM 10 and AM 10 AM 10 routes.
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More Airliners

THE THREE YEAR shortage of twin-engine airliners is about over. The action of the President in removing limitations on the number of transports the airlines may operate is recognition of rapidly changing war conditions, such as the new emphasis on the Pacific front, where heavy four-engine and Curtiss transports are needed.

Almost overnight the airlines are confronted with a new impetus to lay a solid foundation for post-war expansion and service. Within a few months there will be an abundance of DC-3 type models, although in need of costly rehabilitation. The Army expects a shortage of longer-range transports for some time, however, which appears to preclude domestic commercial use of heavier aircraft for months.

The airlines will welcome the decision of government authorities to delegate to CAB the scheduling of airline needs. These allotments will compete, however, with applications from U. S. individuals and foreign interests.

Applications are channeled through DFC and the FEA to the Aviation Division of Surplus Property Board. A working committee consisting of representatives of State, War, Navy, Commerce, CAB, BEC, and FEA then recommends allocations on the basis of CAB's priority list for domestic airlines and the applications of all others.

Washington administrators hold that the rigid requirements for obtaining surplus aircraft were drawn up to insure fair allocation, in contrast to handling some other types of war surplus materials. It seems likely, however, that simplification and elimination of red tape will be necessary, based on several months of experience. Anyone who has ever seen any action which depends on half a dozen Federal agencies has no illusions about speedy operation.

Airline operators are not enthusiastic about loading up with second-hand, war-weary, chaotic aircraft which require a fortune to recondition. They would prefer to get Army approval to earmark a certain number of new transports while they are on the line. At this time Army officers say that such a plan is being considered. Government officials contend that even though the surplus release machine operates slowly, it will not be long before the lines have more planes than they can put through their overhaul shops anyhow, so the lines actually will be subject to little delay. Final action on a project to recondition surplus planes by the manufacturers still has not been taken, however.

The slow rate at which the lines can rebuild surplus aircraft they receive is also cited by government officials as another reason why foreign applicants can be supplied equipment without injury to U. S. lines. After the long starvation period, there will be industry feeling that domestic

operations should be built up before foreign lines get equipment, even though such equipment will help materially in the war effort.

From an economic standpoint, the airlines should have new planes if the Army and Navy can spare them. If not, the surplus machinery must not be permitted to lag behind the airlines' capacity to convert, and the pricing system must be simple and fair, and the cost identical to both foreign and domestic purchasers.

Inspectors and Public Relations

A WASHINGTON editorial plea Nov. 20 for sensible enforcement by CAA's General Inspection Division has brought mail from operators and private flyers from all parts of the country. Despite antiquated regulations, and during the period in which they are being rewritten, it is the *Nines'* contention that the taxpaying fixed base operator and private flyer should be given better service from their government enforcement agency than they have been receiving from some inspectors. More courtesy and common sense by inspectors would solve many problems.

One of the major problems of the private flying public is the unintelligent lack of uniformity among inspectors in their requirements for aircraft, pilots and mechanics certification and inspectors' refusal to accept any departure from their own strict demands.

"Many inspectors," one typical air service operator says, "will require some maneuvers in checking a student pilot that others do not require. Some will require that a maneuver be done a different way than other inspectors. Quite frequently an inspector makes an appointment with a student to go up for a flight test and then makes him wait for long periods of time, and a great many inspectors have appointments with students and cancel them on short notice. This has a very bad psychological effect on the student and in many instances they do a very poor job on their check."

"I think that General Inspection would do well to have at their standardization center a course in public relations. Most CAA inspectors are not very adept at acting the public. I think they are too blunt and in a great many cases not as cooperative as they should be. We are getting an entirely different class of people in aviation now, important people, business and professional men and women who demand courtesy."

Courtesy and common sense by inspectors in dealing with the public will do more for personal flying now than any proposed plans for the indefinite future. There is no need to await a starting date. Several CAA regions have cooperative, up-and-coming inspection staffs. Washington CAA officials should see that the attitude in other areas is changed, and quickly.

ROBERT H. WOOD

DZUS*
KEEPS PACE

In the early days of aviation the Dzus Spiral-Clot Fastener was developed to fill a vital need for a dependable fastener. Through the years this fastener kept pace with the ever-increasing demands of a fast-growing industry. Today—Dzus dependability is proved by the different types of aircraft where the Dzus Fastener is installed. For example: Dzus Fasteners are used on the Boeing B-29 Superfortress—the plane that carries the heaviest bomb load the furthest. On the other hand, Dzus Fasteners are found on advanced type aircraft, such as the Sikorski HO4S Helicopter. It takes a dependable product to be chosen for every type of aircraft.

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"Timken Rocker Arm Bearings were in the intake and exhaust valves of *all four engines without change during operation*," points out the builders, Wright Aeronautical Corporation of New Jersey.

Endurance is not the only quality Timken Roller Bearings impart to aircraft engines. Compactness, light weight, freedom from friction, smooth operation, economy of maintenance — as well as maximum radial and thrust load-carrying capacity are other advantages which enabled this outstanding record to be established.

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